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VOLUME 32 JANUARY, 1960 NUMBER 1

RHEUMATOID ARTHRITIS IN CHILDHOOD; INVOLVEMENT OF THE HIP

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DELAWARE STATE MEDICAL JOURNAL

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VOLUME 32 JANUARY, 1960 NUMBER 1

RHEUMATOID ARTHRITIS IN CHILDHOOD;*

INVOLVEMENT OF THE HIP

● **This analysis of thirty-five cases and eight brief case reports of rheumatoid arthritis in children, from the Alfred I. duPont Institute, points to a ratio of girls to boys as six to one; the average age of onset as five years; the knee as the first joint most frequently involved and that 57% of the children became severely disabled.**

A. R. Shands, Jr., M.D.

C. C. Muehe, M.D.

In a total of 6,388 children seen for the first time at the Alfred I. duPont Institute in Wilmington, Delaware, rheumatoid arthritis of one or more joints was found in thirty-five cases; this is an incidence of one in every 183 children examined in the clinic and one in every 1865 children admitted to the wards (Table I). Eleven of these had no hip involvement. The hip joint was affected primarily in only one child.

Affections of the hip in childhood are quite common in orthopaedic clinics, but few are due to rheumatoid arthritis. In our clinic, over an eighteen-year period, while there were twenty-four children with hip joint involvement associated with rheumatoid arthritis 937 or 14.7 per cent of all children examined had a diagnosis of a hip joint affection. The number of rheumatoid arthritic hip children represents 2.6 per cent of the total hip cases. Of the hip affections, congenital dislocation, congenital acetabular dysplasia, coxa plana, and a slipping of the upper femoral epiphysis were the most common.

In all series of cases of rheumatoid arthritis, both juvenile as well as adult, there is an overwhelming predominance of the female over the male. In a series of juvenile cases reported in 1946 by Coss and Boots[1] at the Presbyterian Medical Center in New York City, the ratio of female to male was five to one, while in a series of nineteen children reported by Clemmensen and Arnso[2] from the Municipal Hospital in

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*Presented in a Symposium on the Hip at the meeting of the American College of Surgeons, Chicago, Illinois, on October 8, 1958.

**Alfred I. duPont Institute, Wilmington, Delaware.

Copenhagen, the ratio was four to one. In our series there were thirty girls and five boys, or a six to one ratio (Table II). In the thirty-five cases there was only one Negro child (2.9 per cent), although the incidence of the Negro patients in the admissions to the hospital is approximately 15 per cent.

The average age of thirty-five patients when first seen was nine years seven months, varying from two to sixteen and one-half years (Table III). The average age of onset, however, was five years, varying from six months to thirteen years. There were only five of the thirty-five, or 14 per cent, in whom the age of onset was over eight years; in seventeen, org 49 per cent, the age of onset was four years or less, so it can definitely be said that in our series this disease occurs more often in the young child of the preschool and early school age periods. In the literature there are few references to the age of onset.

Short, Bauer and Reynolds[3] have stated that the knee joint is most commonly involved first and, next, the joints of the hands and feet. Lockie and Norcross[4] and Edstrom[5] found that rheumatoid arthritis in childhood starts more often in the larger joints than in the smaller joints. These findings are confirmed in our series (Table IV). There were only two monarticular involvements, one knee and one elbow, or

TABLE I

STATISTICS ON
RHEUMATOID ARTHRITIS (R.A.)
AT THE ALFRED I. duPONT INSTITUTE
JULY 1940 — OCTOBER 1958

	No.	Per Cent
New Patients in Clinic	6388	
With R. A.	35	.55 (1 in 183)
Plus Hip Involvement	24	.37
Admissions to Ward	1865	
With R. A.	32	1.72 (1 in 58)
Plus Hip Involvement	24	1.29

TABLE II

SEX INCIDENCE

	No.	Per Cent
Girls	30	86
Boys	5	14
	35	

Ratio — Girls: Boys — 6:1

TABLE III

AGE OF ONSET AND AGE
AT FIRST EXAMINATION

	Of Onset	At First Examination
6 mos. - 2 yrs.	5	0
2 yrs. - 3 yrs.	6	3
3 yrs. - 4 yrs.	5	2
4 yrs. - 8 yrs.	9	8
8 yrs. - 12 yrs.	8	7
12 yrs. - 15 yrs.	2	11
15 yrs. and over	0	4
	35	35

TABLE IV

INITIAL JOINT INVOLVEMENT

Knee	13
Wrist	5
Hand	4
Ankle	4
Elbow	3
Foot	2
Neck	1
Hip	1
Multiple	2
	35

TABLE V

DEGREE OF SEVERITY

	No.	Per Cent
1. Mild	4	11
2. Moderate	11	31
3. Severe	20	57
	35	

TABLE VI

ROENTGENOLOGIC CHANGES IN 24 HIP CASES WITH RHEUMATOID ARTHRITIS

	No.	Per Cent
1. Decalcification	19	79
2. Bone Destruction	9	38
3. Bone Proliferation	11	46
4. Narrowing of Joint Space	17	71
5. Deformity of Pelvis	10	42
6. Head of Femur		
a) Hyperplasia	15	63
b) Hypoplasia	5	21
c) Subluxation or Luxation	8	33
7. Sacroiliac Involvement	13	54
8. Symphysis Pubis Involvement	6	25

6 per cent of the total in the thirty-five cases.

Concerning the severity and extent of crippling in the thirty-five cases, twenty (57 per cent) could be classified as severely disabled, i.e., those who had multiple joint involvement, contractures, difficulty in walking and carrying on the activities of daily living; eleven (31 per cent) were moderately disabled, and four (11 per cent) were only mildly involved (Table V). The per cent of severely disabled children with rheumatoid arthritis seen in a crippled children's hospital is undoubtedly greater than would be seen in an arthritis clinic of all ages. Most of the children usually have been either on a children's ward in a general hospital or in a children's hospital for long periods of time before their admission to a crippled children's institution.

The roentgenologic changes of the skeleton which have been most frequently reported[1,6] are decalcification, bone production, bone destruction, narrowing of the joint space, ankylosis, deformities of the head of the femur, and varying degrees of luxation. Decalcification, narrowing of the joint space, and hyperplasia of the head of the femur are the three most common roentgenologic findings in our series (Table VI).

The following are brief case reports on the eight children whose roentgenograms represent the most severe, and at the same time the most typical hip joint changes:

Case No. 1 is a five and two-third year old white girl, admitted to the Alfred I. duPont Institute in June, 1946. The past history shows that at the age of four and one-half years she fell and injured her right knee which became swollen; this was followed by a persistent fever and transient migratory swelling of other joints. A diagnosis of rheumatic fever was made.

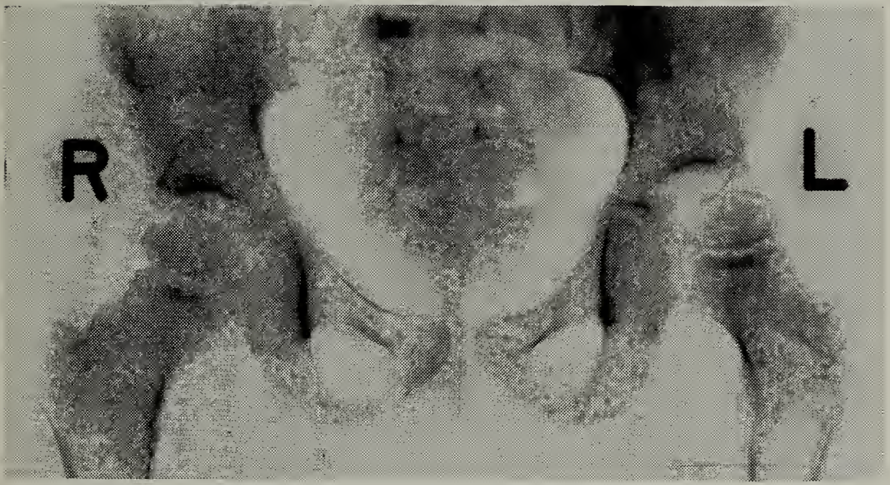


Figure 1. Roentgenogram of hips in Case 1, (June 28, 1946). Age 5 2/3 years, one year following onset of generalized rheumatoid arthritis. Note the lateral protrusion of the left femoral head.

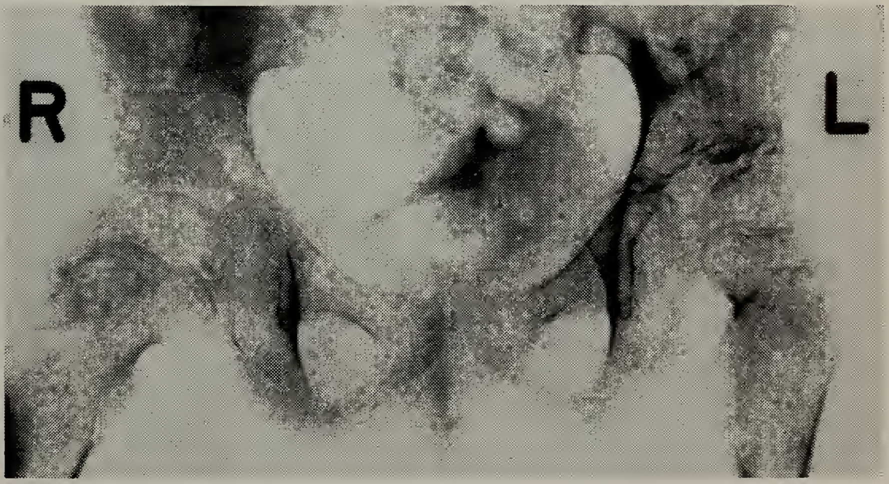


Figure 2. Roentgenogram of hips in Case 1, (9/1/48), two years and two months after Figure 1. Age 8 years. Note 1) a subluxation of the left hip, 2) irregularity and flattening of the superior margin of the left acetabulum, 3) enlarged femoral heads, 4) narrowing of the left femoral shaft, and 5) marked decalcification.

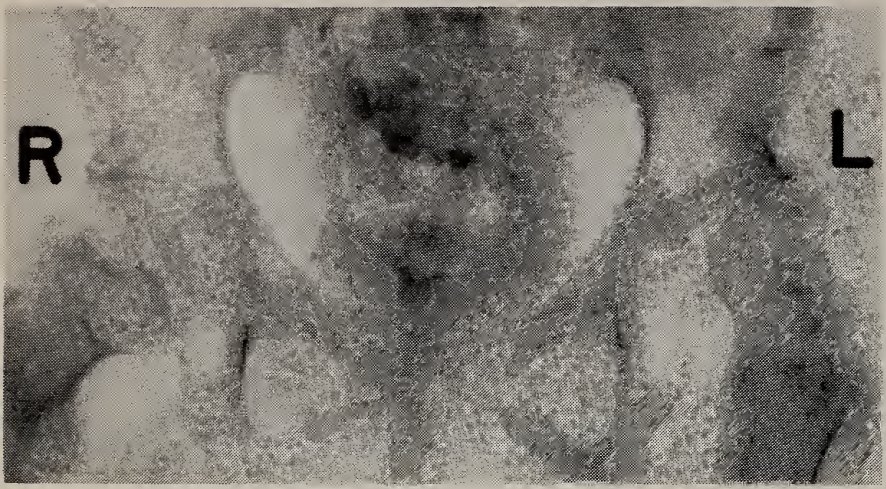


Figure 3. Roentenogram of hips in Case 1, (3/1/51), two and one-half years after Figure 2. Age 10 1/2 years Note 1) more marked subluxation of the left hip, 2) an upward angulation of the outer superior acetabular margin, and 3) marked decalcification. Both hips now have a flexion contracture of 25 degrees with little motion in either hip, especially the left.

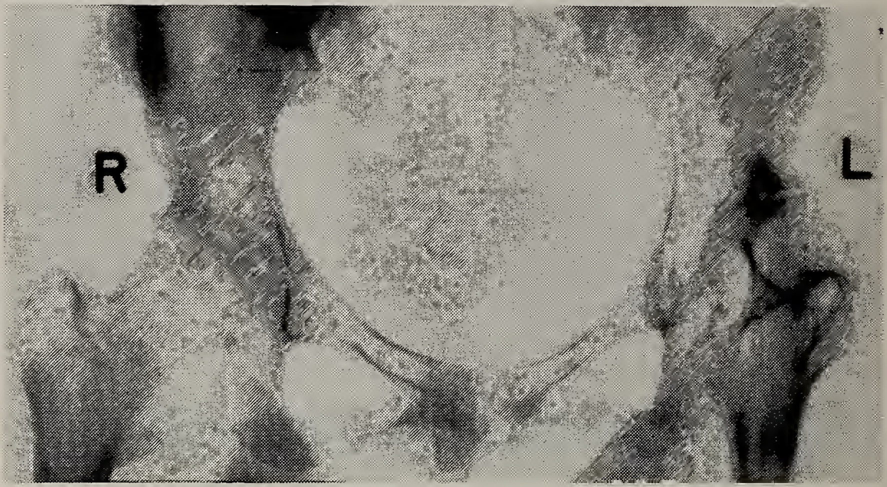


Figure 4. Roentgenogram of hips in Case 1, (9/20/56), five and one-half years after Figure 3. Age 16 years. Note 1) marked subluxation of the left hip, 2) shallow deformed left acetabulum with spur formation, 3) joint space on the right with shelf-like acetabular spur, and 4) deformity of both femoral heads, especially the left. Both hips had contractures of 30 degrees or more with a minimal amount of motion.

On admission there was swelling of the right knee and limited motion of the left hip. Roentgenograms of the hips showed a shallow acetabulum on the left with a beginning lateral protrusion of the head of the left femur (Fig. 1). Soon after admission a rapid and severe progression of involvement of all joints, except the shoulders, took place. Supportive medical treatment afforded some improvement early in her hospital course, only to be lost during subsequent exacerbations of her disease. These were initiated by several sever febrile episodes accompanying upper respiratory infections. Following the administration of folic acid, she developed a generalized dermatitis and a more marked joint involvement. In October, 1948, two years and two months following her first admission, the roentgenograms of the hips showed a definite subluxation of the head of the left femur with an irregular and shallow acetabulum (Fig. 2). She was discharged with limitation of motion in nearly all joints; however, she was able to walk for short distances with assistance.

One month after discharge, she was readmitted because of an acute and extensive dermatitis. Penicillin sensitive streptococci were cultured from the skin lesions. Penicillin therapy resulted in an immediate improvement in the dermatitis, but all joints remained stiff, including the jaws. Chest expansion was limited. There was now an increasing restriction of motion in both hips. Roentgen studies of the hips at this time showed marked decalcification, narrowing of both joint spaces, and a continued subluxation upward and outward of the left femoral head. Skin traction was not effective in reducing the subluxation. On discharge, seven and one-half months after admission, she was able to walk on crutches.

The third admission in July, 1949, one month after her second discharge, was again because of an acute exacerbation of the dermatitis. At this time there was practically no motion in the hips which were in 10 degrees flexion. In addition there was marked stiffening of all the other large joints of the extremities and of the fingers. The right knee was ankylosed in 120 degrees flexion. She was discharged four months after this admission.

The fourth admission in May, 1950, again was for treatment of her skin condition. At this time she went into cardiac failure. A questionable diagnosis of Rocky Mountain Spotted Fever was made on the basis of serologic studies. She responded to Aureomycin and was discharged in four months with the same stiffening in all major joints of the extremities, but still able to walk with the use of crutches.

For the next fifteen months while at home, her ability to ambulate on crutches and her general health definitely improved. In 1951 and in 1952 she was readmitted for two periods, one of six months and one of five months, for streoid therapy. Several courses of ACTH and Cortisone were given separately during these periods and which, associated with physical therapy, provided temporary improvement.

Roentgenograms of the left hip at the time of the sixth admission in 1952 showed a more marked subluxation with a shelf-like acetabular flattening and moderate epiphyseal deformity (Fig. 3).

She was readmitted for the seventh time in 1956, because of contractures, pain and stiffness in her hips. Motion had decreased in both hips until there was only a few degrees left. Roentgenograms of the hips now showed extreme narrowing of joint spaces, flattened deformed femoral heads, a moderate subluxation on the left with a flattened and irregular shelflike superior acetabular surface (Fig. 4). Traction, phys-

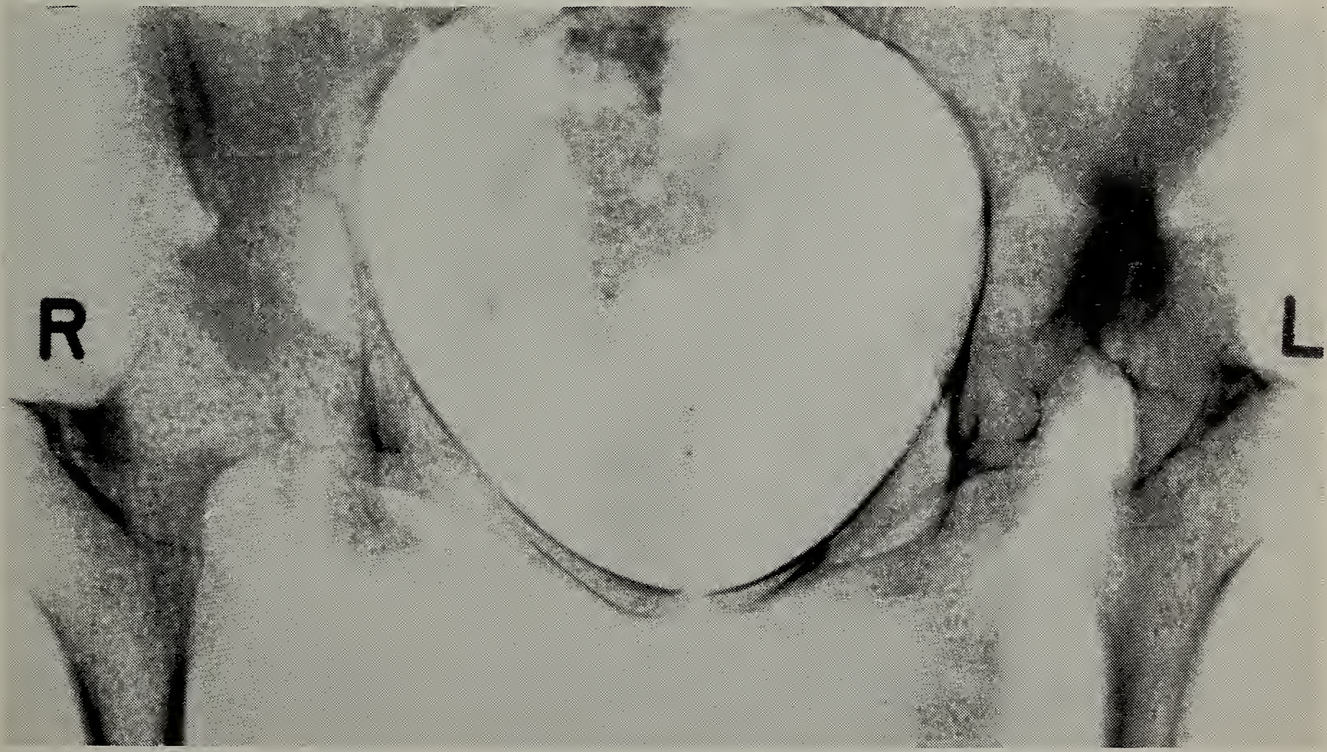


Figure 5. Roentgenogram of hips in Case 2, age 17¾ years. Note 1) almost complete subluxation of the left hip, 2) flattening of femoral heads, 3) acetabular distortion on both sides, 4) narrowing of joint space on the right, and 5) decalcification. Onset of rheumatoid arthritis had been at age three with rapid progression to involvement of all joints. At time roentgenogram was taken the patient was able to walk without crutches, there was difficulty in getting up from a sitting position, and the hips had marked flexion contractures with only a little motion remaining.

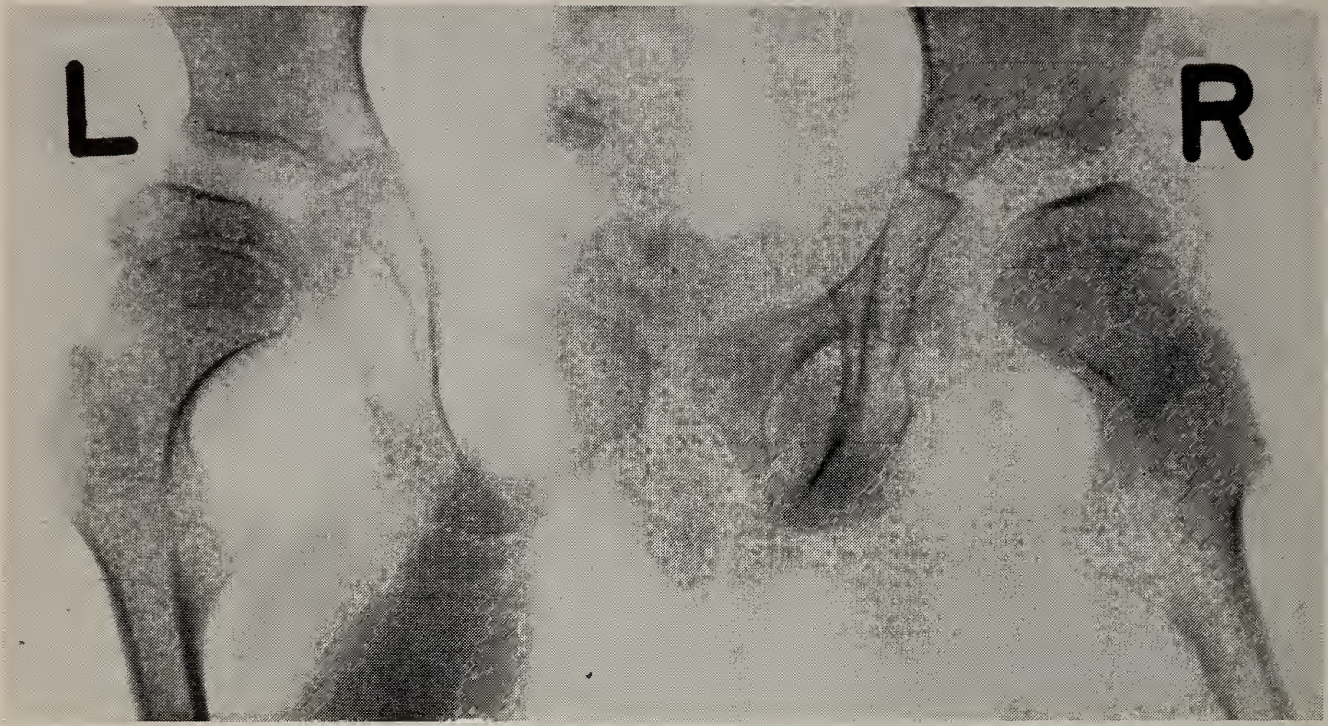


Figure 6. Roentgenogram of hips in Case 3, age 7½, seven years following onset of rheumatoid arthritis. Note 1) bilateral flattening of the femoral epiphyses similar to very early changes in coxa plana, 2) poorly seated and enlarged femoral heads, 3) flattening of the left upper acetabular margin, 4) pipe stem femoral shafts indicative of marked atrophy, and 5) adduction of right hip and abduction of left hip. At time of roentgenogram there was a bilateral 55-degree hip flexion contracture. This was reduced with traction and patient made ambulatory with crutches and braces.

ical therapy and gentle manipulation of her hips proved of no avail, and, if anything, she became worse.

When last seen as an out-patient on April 2, 1958, she was in a wheel chair and unable to walk.

Case No. 2 is a fourteen and one-half year old white girl, admitted to the Alfred I. duPont Institute in December, 1953. The past history shows that at the age of three years she complained of stiffness in her knees and became fatigued easily. She had difficulty in stooping, and in getting up from the floor, she climbed up on her legs in order to rise to an erect position. Her condition progressed and she developed a marked lordosis which was found to be due to flexion contractures of her hips. A diagnosis of progressive muscular dystrophy was made in January, 1943, on the basis of a muscle biopsy. In 1944 extension of the hips was limited to 170 degrees on the right and 150 degrees on the left. No abduction was present. Other motions were normal. In 1945 there was an increase in the limitation of extension in the hips as well as limitation of rotation. The knees and elbows now showed a limitation of motion.

On admission there was a marked contracture of the hips, knees, elbows, and wrists. The back showed limited flexion and extension with a moderat dorsal kyphosis and a lumbar lordosis. The feet were in slight equinus.

On the basis of normal creatinine and creatine studies, with absence of any clinical evidence of progressive muscular dystrophy, a diagnosis of rheumatoid arthritis was made.

Roentgenograms of the hips showed a marked subluxation of the left hip, a flattening of both femoral heads and extremely shallow acetabula, particularly on the left (Fig. 5).

Physical therapy and conservative orthopaedic measures improved the wrists, but the other joints remained unchanged. She left the hospital able to walk without assistance.

When last seen in the Out-patient Clinic, she was walking quite well but had difficulty in getting up from a chair.

Case No. 3 is a seven and one-half year old white girl, admitted to the Alfred I. duPont Institute in July, 1947. The past history shows that at the age of nine months, when it was found that she was unable to straighten her knees, elbows or hands, a diagnosis of arthrogryposis was made; later the diagnosis was changed to rheumatoid arthritis. From this time to her admission, there was a gradual progression of her deformities with marked flexion contractures of her knees and hips. Roentgenograms showed flattening of the epiphyses of both hips resembling an early coxa plana (Fig. 6).

Treatment consisted of skeletal traction to the lower extremities which decreased the knee and hip contractures. The deformities of the wrists and elbows were improved by conservative means. With long leg braces she was made ambulatory and was walking quite well when discharged nine months after admission.

Case No. 4 is a thirteen year old white girl, admitted to the Alfred I. duPont Institute in December, 1944. The past history shows that she was in good health until the age of two and one-half years, at which time she began to have pain and swelling in her right knee, then the left knee, followed by involvement of wrists, fingers, feet, back and jaws. Over an eight-year period she was a patient in three different hospitals, in which she had general medical treatment, physical therapy and femoral osteotomies to straighten deformities.

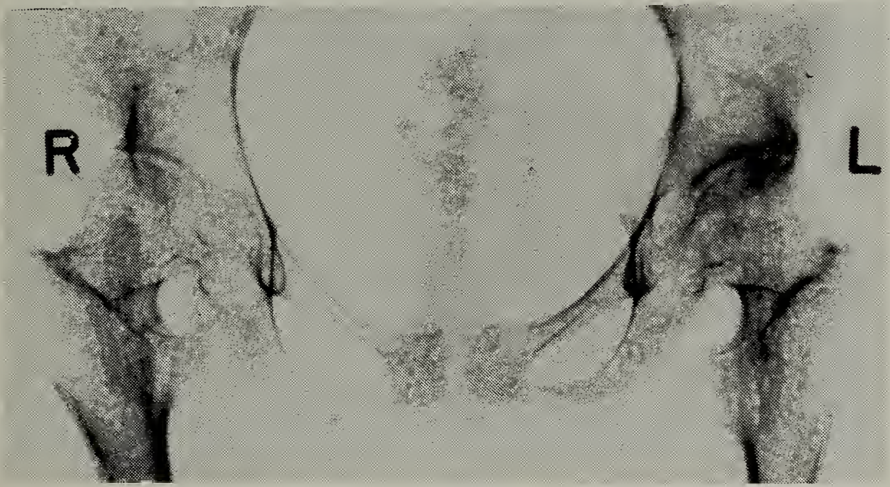


Figure 7. Roentgenogram of hips in Case 4, age 15, twelve and one-half years after onset of rheumatoid arthritis. Note 1) narrowing of joint spaces, 2) deformities of femoral heads with shallow acetabula, and 3) generalized decalcification. In spite of there being only a slight motion in hips with moderate flexion contractures, the patient was able to walk surprisingly well.

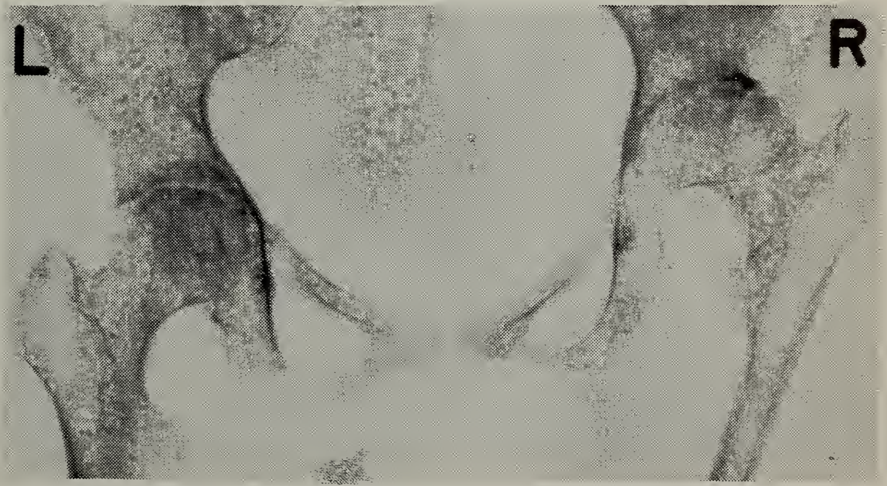


Figure 8. Case 5, age 13 years, approximately ten years after the onset of rheumatoid arthritis. Note 1) extremely narrowed joint spaces, 2) a marked adduction deformity on the right, 3) the distortion of the right femoral head, 4) abnormalities in both acetabula, 5) pipe stem femoral shafts indicating extreme bone atrophy and 6) decalcification. Patient was able to walk with crutches in spite of hip contractures and deformities.

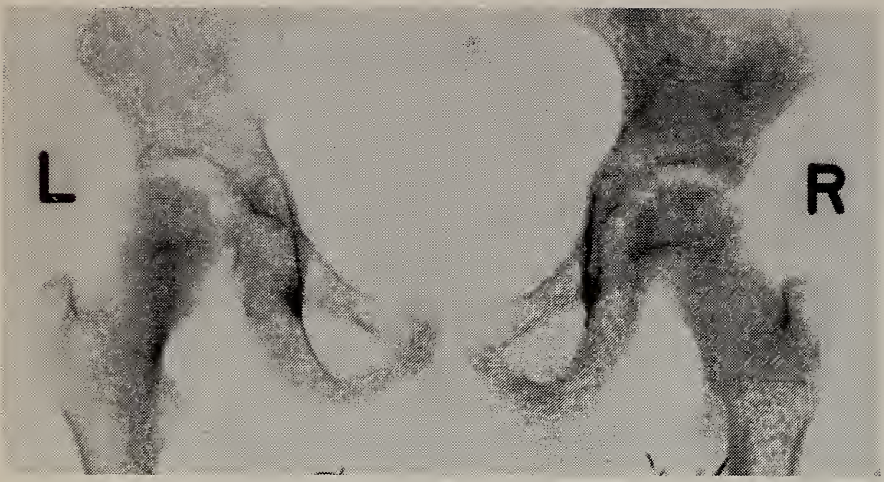


Figure 9. Roentgenogram of hips in Case 6, age 9 years, five years after onset of rheumatoid arthritis. Note large femoral head (coxa magnum) on the left which is not well seated in the acetabulum. At time of roentgenogram there was minimal disability in the hips.

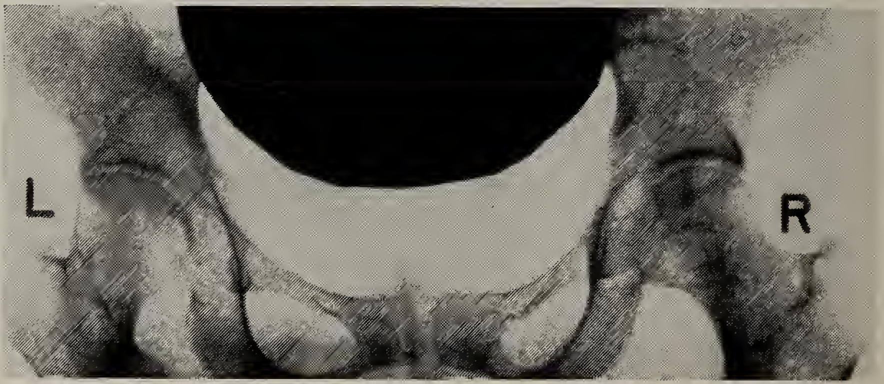
On admission the patient was walking on crutches with assistance. She had a flexion-adduction contracture of the right hip, a bilateral genu valgum with a stiff left knee, a bilateral pes cavus and claw toes, an equinus deformity of the right foot, a moderate kypho-scoliosis, stiff shoulders, a bilateral wrist flexion deformity and finger contractures. She could feed herself with her right hand but not with her left. There was retraction of the mandible with a marked overbite and restriction of motion in both temporo-mandibular joints. Roentgenograms of the hips two years after admission showed a narrowing of the joint spaces with deformed and flattened femoral heads (Fig. 7).

During her two and one-half year stay in the Institute, she had repeated wedged plaster casts to correct deformities of both upper and lower evtremities, extensive physical therapy, an arthrodesis of the left wrist to give an improved functional position for the fingers, a left supracondylar osteotomy to correct a valgus deformity, and plaster cast treatment to control the progression of the kypho-scoliosis followed by a corset brace. There was a progressive increase in the stiffness in the hips with only 15 degrees to 20 degrees of motion remaining when discharged. Upon discharge she was able to walk by herself without braces and crutches, and only needed help in getting in and out of a chair.

Case No. 5 is a ten-year old white girl, admitted to the Alfred I. duPont Institute in June 1942. The past history shows that at three and one-half years of age she began to have pain, swelling and limitation of motion in the interphalangeal joints of her left hand; at which time a diagnosis of rheumatoid arthritis was made. This progressed to a severe generalized joint involvement restricting her to a bed or chair by the age of seven.

On admission she was unable to walk. With general supportive treatment, physical therapy and long leg braces, she was made ambulatory and discharged in eight months. Two years later she was readmitted with a recurrence of the deformities

Figure 10. Roentgenogram of hips of same patient as in Figure 9, ten and one-half years later. Note moderate deformity of head of left femur with narrowed joint space. No evidence of coxa magnum. At time of roentgenogram there was slight limitation of internal rotation in the left hip with occasional discomfort.



and again unable to walk. A triple arthrodesis was performed on the left foot to improve the weight bearing surface. With traction, gentle manipulation and braces, she was again made ambulatory. During this second admission, roentgenograms of the hips in October, 1946, showed the marked changes as seen in Figure 8.

In April, 1948, when readmitted for the third time, she was able to walk unsupported but had pain in her left leg, foot, knee and hip. The stiffness and deformities in all of her joints and spine had now increased. The hips showed 45-degree flexion contracture with the right hip being ankylosed in adduction and internal rotation and the left in moderate abduction. In May, 1948, a subcutaneous adductor tenotomy was done on the right to correct the adduction deformity. However, in spite of intensive post-operative physical therapy, there was recurrence of the deformity in six weeks after operation. When discharged, she was ambulatory with braces and crutches.

When last seen in the Out-patient Clinic in November, 1949, she was in a wheel chair and unable to walk.

Case No. 6 is a seven and one-half year old white girl, admitted to the Alfred I. duPont Institute in June, 1946. The past history shows that when she was four years of age she had an injur yto the right knee which became swollen and stiff. This was followed by pain and stiffness in the left knee, hips and fingers, and a diagnosis of rheumatoid arthritis was made.

On admission there was limitation of motion in the right knee and proximal inter phalangeal joint of the right index finger without other joint involvement. Improvement in motion in the knee was obtained with physical therapy and in the finger with a Banjo splint. While in the hospital she developed pain and stiffness in the knees and hips. She was discharged in nine months. Roentgenograms of the hips at time of discharge showed a large femoral head on the left which is not well seated in the acetabulum (Fig. 9).

In 1948 she was readmitted because of valgus deformities in both knees. These deformities were corrected by tibial osteotomies. At this time there was a complaint of discomfort in the hips; however, they were normal on examination.

Figure 11. Roentgenogram of hips in Case 7, age 8 years, two years after onset of rheumatoid arthritis. Note 1) fuzzy abnormally shaped epiphyses, 2) increased calcification on either side of epiphyseal line, 3) slight narrowing of the joint spaces, and 4) decalcification. At the time of this roentgenogram there was some limitation of motion in both hips and there had been steroid therapy for six months.

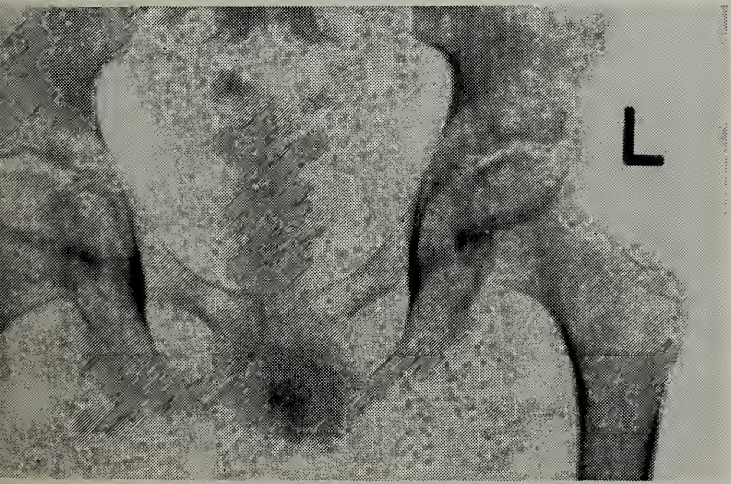
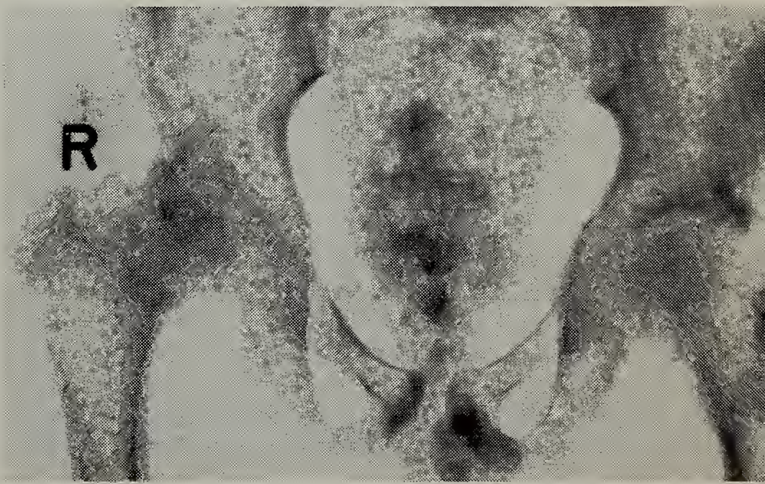


Figure 12. Roentgenogram of hips of same patient as in Figure 11, five years later at age 13. Note 1) a flattened irregular right femoral head with no epiphyseal line, a shallow acetabulum and a mild subluxation, and 2) that the head and neck of the left femur suggests an old healed coxa plana. At the time of this roentgenogram weight bearing caused definite pain in the left hip.



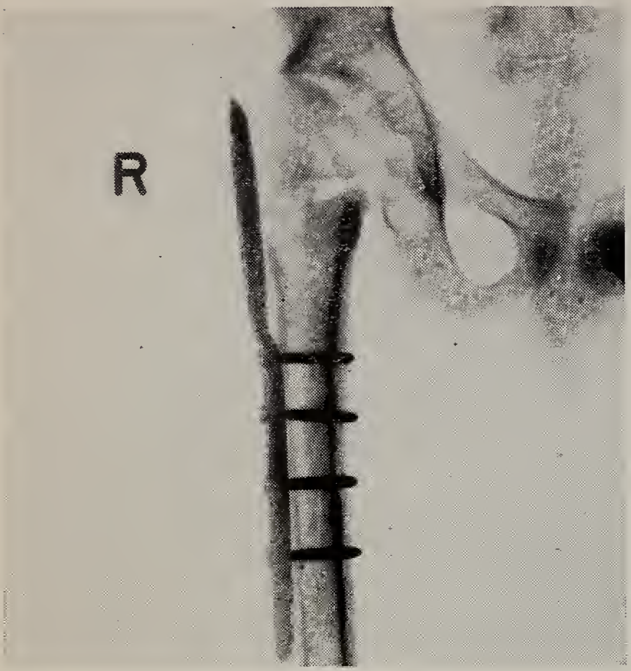


Figure 13. Roentgenogram of the right hip of the same patient as in Figures 11 and 12 immediately following a McMurray displacement osteotomy, held with a blade plate. This roentgenogram was taken seven weeks after Fig. 12.

She was readmitted for the third time in 1949 for physical therapy to her right knee. At this time there was a slight limitation of abduction in the left hip.

In March, 1951, she was readmitted for the fourth time, because of severe progression of the disease which now involved nearly all joints, particularly the right wrist and knee. A left supracondylar osteotomy was done to correct a genu valgum deformity, which was followed by an arthrotomy of the left knee to remove a large hyaline cartilage sequestration. Also, an epiphyseal arrest was done on the left lower femoral epiphysis because of an overgrowth of this femur. ACTH was given with "moderate but gratifying" relief of symptoms. The hips were moderately stiff.

During the fifth admission in September, 1953, the left wrist was fused in a position of function. No activity of the rheumatoid arthritis was noticed Her hips were now freely movable in all directions.

At the time of her last visit to the Outpatient Clinic in July, 1958, there was occasional discomfort in her left hip with slight limitation of internal rotation. Roentgenograms showed a deformed head of the left femur and a narrow joint space (Fig. 10).

Case No. 7 is a six and one-half year old

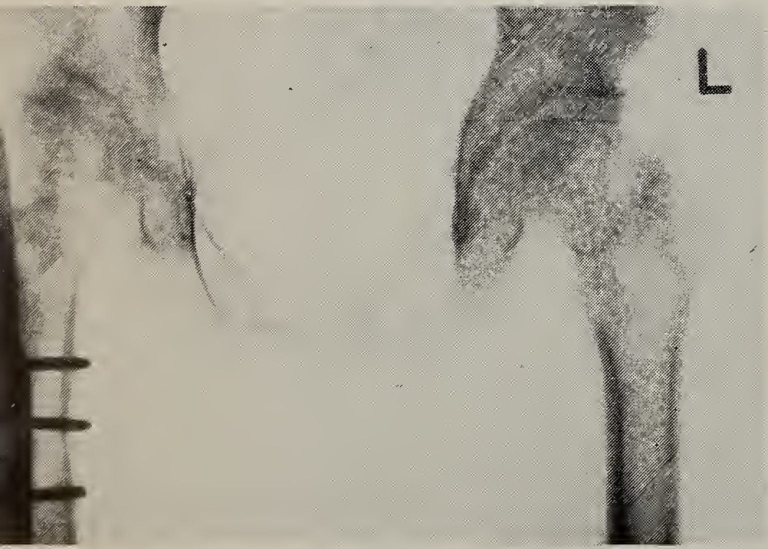


Figure 14. Same patient, one year after McMurray osteotomy. Note 1) the well-healed osteotomy, 2) the almost complete disappearance of the joint line on the right, 3) the two breaks of bone on the medial side of the osteotomy side, 4) the large flattened and distorted head of the left femur suggesting an old healed coxa plana.

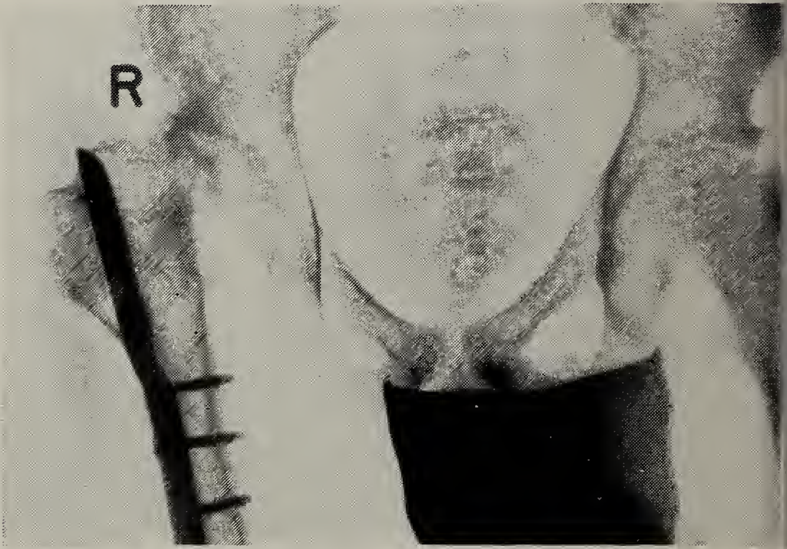


Figure 14a. Roentgenogram of the same patient as in Figure 14, at age 15 years, two years after McMurray osteotomy. Note 1) in comparing this roentgenogram with Figure 14 there is a very definite increase in the subluxation of the right hip with an adduction deformity, and 2) the right acetabulum is extremely shallow as compared with that on the left.

white boy, admitted to the Alfred I. duPont Institute in January, 1950. The past history shows that six months prior to this time he developed a painful and swollen right knee which was followed by a similar involvement of the left knee. During the next three to four months, the ankles, elbows, wrists, hands, and feet became involved, while he ran a febrile course and was confined to bed. A diagnosis of rheumatoid arthritis was made.

After admission he continued to run a septic course for several months with severe generalized joint involvement and a soft systolic murmur. On admission there were 20-degree flexion contractures in the hips with mild limitation of internal rotation and abduction. The knees had moderate contractures. The hip and knee contractures were reduced with skin traction, this was followed by splints and physical therapy. He was discharged six months after admission with only a mild limitation of hip motion.

In October, 1950, he was readmitted with an exacerbation of all joint symptoms. With ACTH, his symptoms decreased and his walking improved. Roentgenograms of the hips in March, 1951, showed fuzzy epiphyses and decalcification (Fig. 11). In June, 1951, there was practically no restriction of hip motion. A fracture of the left femur occurring in 1951 healed uneventfully.

In 1955 a limp on the right developed because of hip pain on weight bearing. Six months later there was an adduction deformity of the right hip with marked limitation of all motion and a three-fourths inch shortening of the right lower extremity. Roentgenograms in February, 1956, showed a flattened, mushroom shaped right femoral head with a shallow acetabulum and beginning subluxation (Fig. 12). A McMurray subtrochanteric displacement osteotomy was performed in March, 1956 (Fig. 13). Upon weight bearing three months later, there was a complete absence

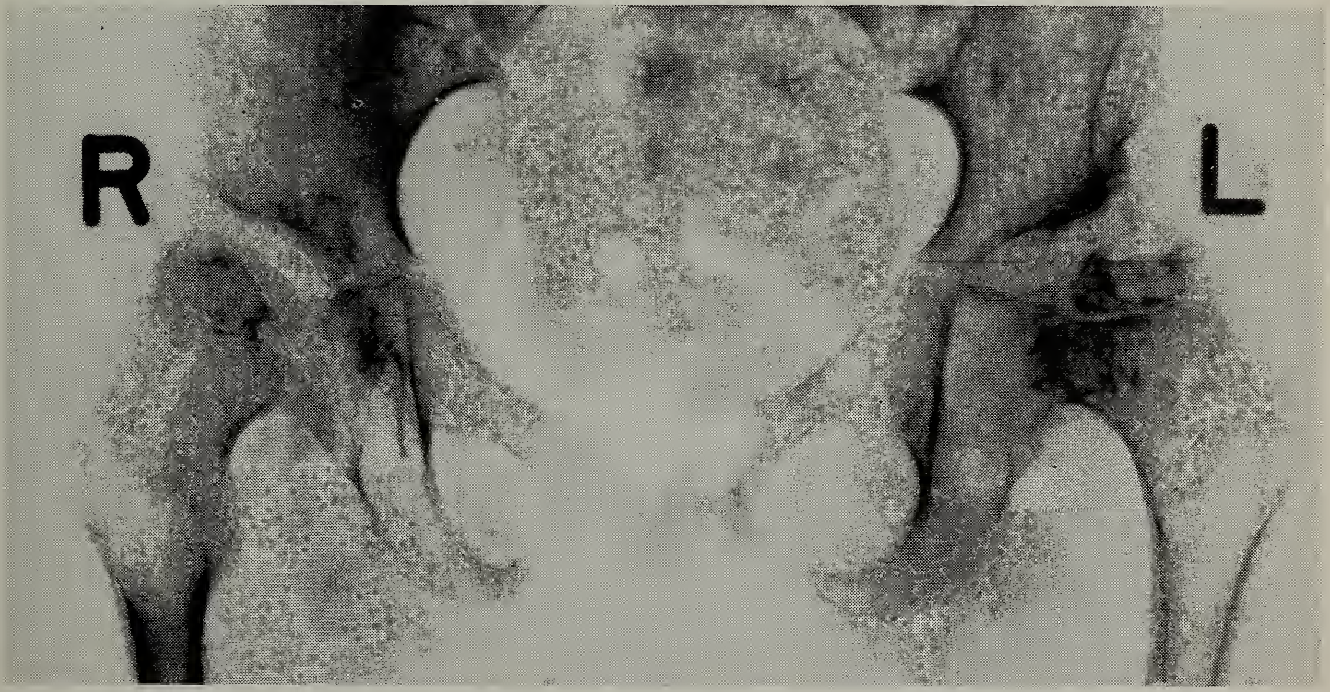


Figure 15. Roentgenogram of the hips in Case 8, age 5 years, two and one-half years after onset of rheumatoid arthritis. Note 1) large head and neck of both femora, 2) irregularity of both epiphyses with an eroded area on the left, 3) shallow acetabula with imperfect seating of the femoral heads suggesting a mild subluxation, 4) pipe stem femoral shafts indicating extreme bone atrophy, and 5) marked decalcification. Fourteen months prior to this roentgenogram, the left hip had a pathological dislocation requiring an open reduction. There was a marked limitation of motion in both hips but the patient could ambulate with braces and crutches.

of pain. Ten months after the operation, the roentgenogram showed that the osteotomy had completely healed and the relationship of the head of the femur to the acetabulum was definitely better than prior to operation (Fig. 14). However, the roentgenogram taken one year later, and approximately two years following the operation (March, 1958), showed further subluxation of the head of the femur with a definite adduction deformity (Fig. 14a). When last seen in December, 1958, he was completely pain free and walking quite well with only a slight limp.

Case No. 8 is a five year old Negro girl, admitted to the Alfred I. duPont Institute in April, 1955. The past history shows that at the age of two and one-half years in March, 1952, she had an otitis media which was followed in four months by joint swellings. In March, 1954, the patient was admitted to a local hospital in acute distress, with multiple joint involvement and flexion deformities of the knees, shoulders, and elbows. The treatment consisted of Cortone, supportive therapy and traction for flflexion deformities of hips and knees, followed by plaster cast wedgings. In July, 1954, a pathological dislocation of the left hip occurred requiring an open reduction.

On admission she showed marked involvement of all joints of the upper extremities with pain, limitation of motion and deformities. The lower extremities showed involvement of the hips and knees with complete absence of motion. There was a genu valgum deformity on the left with an internal rotation deformity of the right lower leg. There was some motion in the feet and ankles. All attempts to move the joints were painful. The lower extremities were splinted and the acute condition gradually subsided. Physical therapy and gentle manipulation of the joints were begun after a month. A slight increase of motion in a few joints was obtained. Steroid therapy was of no benefit. Roentgenograms of the hips at this time showed irregularity of both upper femoral epiphyses, especially on the left, shallow acetabula and imperfect seating of the femoral heads (Fig. 15).

Two months after admission a pathological fracture occurred in the left lower femur; then one week later fractures occurred in the right upper tibia and fibula; and two and one-half months later in both tibiae. In November, 1955, Testosterone and Stilbesterol were started in an effort to improve the general condition and possibly aid in recalcification of her severely demineralized bones. In January, 1956, the patient was able to ambulate a little with braces and crutches with a very slow gait. In early April, 1956, a reduction in the hormonal therapy was begun. There had been two episodes of slight menstruation. Upon discharge, thirteen months after admission, the patient was ambulating fairly well in braces with knees and hips showing a few degrees of motion, and in spite of the slight flexion deformity of the fingers and wrists, she was able to hold her crutches with a good grip.

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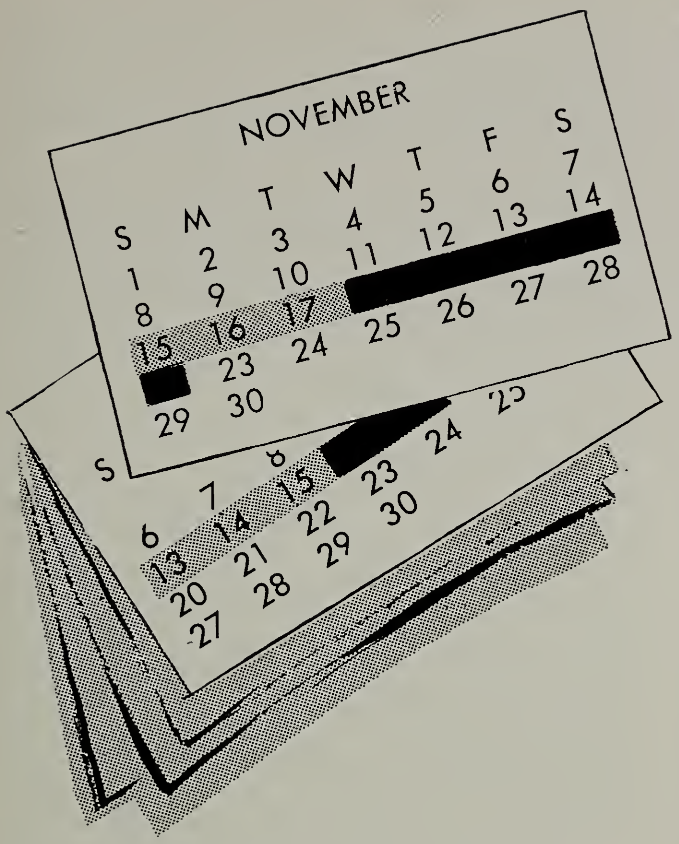

● The second part of a discussion on this frequently troublesome condition is concluded in this issue. Part I appeared in the November Journal.

DYSMENORRHEA AND PREMENSTRUAL TENSION[*]

O. N. Stern, M.D.[**]
H. Keith Fischer, M.D.
Laurence L. Fitchett, M.D.
Abraham S. Rakoff, M.D.

We can see from this discussion that Dr. Fischer has given us, that the psychiatric plays a big part in the question of dysmenorrhea. However, for years the medical profession, or should we say within recent years, has been imbued with the idea that a misplacement of hormonal balance is the real causative factor in the production of dysmenorrhea. It is interesting to note that the average girl who begins to menstruate does not have dysmenorrhea. She only develops that dysmenorrhea when she begins to ovulate. So the girl who has dysmenorrhea, if she has no psychiatric factor behind it usually can consider herself as being in an ovulatory phase of that particular menstrual cycle. The question of hormones is quite vast. There is quite a disagreement among the various gynecologists as to which is the proper factor. In fact, in addition to hormones, certain other facets of therapeutics have been investigated. We know that McKnight and Butler have gone very thoroughly into the question of vitamin E, or alpha tocophorol and they have proven that they have a certain amount of relief with this drug, believing that the vitamin E causes an increased vasodilatation of the terminal arterioles and therefore decreases the spasm of menstruation. We also have the work of Hezzeltine who went into the question of ACTH. That work was quite inconclusive because of the fact that out of twenty-nine patients that he reviewed, sixteen of them only had primary dysmenorrhea and the follow-up as to results of the treatment was not thorough.

I would like to introduce now Dr. Abraham Rakoff, Professor of Clinical Gynecology, and head of the Endocrinological Division of Jefferson Medical College, to discuss this facet of the symptom complex of dysmenorrhea. Dr. Rakoff.

Dr. Abraham Rakoff: Dr. Stern, member panelists; members of the Delaware State Medical Society:

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[*] Panel discussion presented at the annual meeting of the Medical Society of Delaware, Wilmington, October, 1957.

[**] Moderator of Panel.

Dr. Stern in his opening remarks pointed out very succinctly that dysemnorrhea is a symptom, and as a symptom can be induced. by many different factors. It is a symptom which to my mind is the result of nothing more or less than uterine colic, and like colic from many structures can be influenced in many ways.

Dr. Fitchett pointed out that there are many patients with dysmenorrhea of a mild degree who respond to ordinary analgesics and anti-spasmodics.

Dr. Fischer pointed out that there is also an important psychosomatic element in uterine colic.

The Endocrine Factor

Now, so far as the endocrine factor in dysmenorrhea is concerned, I think the endocrinologist is interested in dysmenorrhea from a number of different standpoints. First of all, he is interested in dysmenorrhea because it is a very aggravating problem to him because most patients with dysmenorrhea are endocrinologically normal, as I will soon point out. But yet he can influence dysmenorrhea by making that patient endocrinologically abnormal, and again he can also select those patients who might have some psychogenic or organic cause for their dysmenorrhea by the way they do or do not respond to hormones. And finally, he is interested in dysmenorrhea because he can also influence this symptom with various hormones.

Dr. Stern pointed out that the great majority of patients with ordinary cramps do not develop dysmenorrhea when they first begin to menstruate. Their first year or two of menstrual life may be perfectly normal and it is not until the ovary has matured and has learned to ovulate so to speak and the endocrine cycle is complete that that dysmenorrhea develops.

Now, the uterus is under the control of many of these hormones that are produced by the ovary. During a normal menstrual cycle we find that estrogen rises progressively to reach its peak at the mid-cycle.

Now, we know that estrogen increases uterine tonus. Is estrogen therefore a factor by increasing uterine tonus and increasing uterine contractions in producing dysmenorrhea?

Contrarywise, Dr. Stern pointed out that estrogenes induce vasodilatation, which would tend to counteract dysmenorrhea. And as I will point out a little later, we also know that estrogenes can be used to treat dysmenorrhea.

Now, we know that the patient who menstruates perfectly normally produces progesterone, and we are taught that progesterone is the normal uterine sedative and that progesterone inhibits uterine contractions, and therefore progesterone ought to be good for dysmenorrhea. Yet on the other hand we know that the great majority of girls who have dysmenorrhea produce progesterone.

On the other hand, as Dr. Stern already pointed out, progesterone produces vasoconstriction. Does this ischemia favor dysmenorrhea? The point I am trying to make is that for almost every hormone you can build a case why it should aggravate dysmenorrhea or why it should help dysmenorrhea. But if you had to pick from a room full of women, one hundred women, let us say, who are endocrinologically normal, I would select those hundred women who have ordinary cramps, because if we study those patients carefully from an endocrine standpoint we know that they are the women who in the highest majority of cases are going to be fertile, that you are going to find normal secretory endometria and who by all studies that we do endocrinologically, are going to turn out to be normal. There will be exceptions, about 15 per cent. But 85 per cent of them, which is a good per cent, are going to be perfectly normal.

Dysmenorrhea a Symptom Complex

That is the first point I would like to make, that the patient with ordinary dysmenorrhea is usually quite normal and that dysmenorrhea is a symptom complex of the endocrinologically normal woman.

One might say then that the changes that these normal hormones produce on the endometrium in preparation for menstruation may be creating some substance within the uterus which is an irritant, and that when menstruation occurs it is truly, as has been said, the bloody tears of a disappointed uterus in which conception did not occur and that therefore there is pychogenic induction of bleeding or pain on the basis of some biochemical change. Well, we know that progesterone does cause the deposition or the formation in the endometrium of acetylcholine and that acetylcholine induces changes in the blood vessels that eventually cause bleeding. Does acetylcholine cause dysmenorrhea or uterine contraction? It has been shown that acetylcholine does not aggravate dysmenorrhea, and if anything, acetylcholine is a vasodilator which alleviates dysmenorrhea.

If estrogen is given to a rabbit the uterus goes into rather marked uterine contractions. If progesterone is then given, the uterine contractions become inhibited and gradually fade out and disappear altogether, which would indicate that progesterone, as I said before, ought to be helpful in the treatment of dysmenorrhea, and yet we know from practice that only occasional patients are helped by progesterone and that as a matter of fact it is the patient who produces normal amounts of progesterone who is more susceptible to dysmenorrhea.

The only type of dysmenorrhea that I know of which is due to a true endocrinopathy is the so-called membranous type of dysmenorrhea, the patient who passes a cast, a decidual cast with her pain. If you study patients of this type we do find they produce excessive amounts of progesterone which causes the formation of a decidual cast, with mechanical irritation.

And if such endometria are sectioned we see excessive decidual reaction.

The Non-ovulatory Cycle

It was discovered that one of the almost sure ways of alleviating dysmenorrhea is to create artificially a non-ovulatory cycle. We can do this in many different ways. One of the easiest and simplest ways it to give estrogen early in the cycle. Estrogen will inhibit the pituitary (f.s.h.) and therefore the ovary will not go on and ovulate.

For this purpose one can use, for instance, Premarin, 2.5 milligrams, twice a day, beginning as soon as the menstrual period is over, and giving it until four or five days before the period is due. When one does this, then the subsequent bleeding is simply an estrogen withdrawal bleeding, and almost always in true essential dysmenorrhea this is painless bleeding and the patient comes back extremely gratified. What is this wonderful medicine which for the first time in her menstrual life has produced a symptomless period?

This gratification, of course, does not last too long, because if you then give this medication the next month, the pituitary escapes, the pituitary finds it has to go to the next higher level, which it does. And in spite of estrogen, the gonadotropins break through, the patient ovulates, as you can prove by basal temperature charts, if she is keeping one, and she has a painful period, and she is extremely disappointed.

This brings up the important point that if you are going to use estrogens for the treatment of dysmenorrhea, you cannot use it continuously. And the best plan to do in such instances of severe dysmenorrhea where you plan to use this type of therapy is to give the estrogen every other month. In this way the patient can be assured of six painless periods out of the year. And this is advisable also because it is not wise to inhibit the pituitary and ovary continuously. By so doing we may produce atrophy of the ovary and later trouble. But if we give it every other month the patient ovulates one month and has a painless period the other month, which leaves us then with six painful periods to cope with by other methods.

Now, that is one way of inhibiting ovulation.

Another way of doing it is to give androgens. One can give androgens again beginning about the sixth or seventh day after the onset of menstruation in the form of methyl testosterone, 10 milligram tablet, three times a day, for about six days. One does not have to give it throughout the cycle. If you give it for about six days, then the subsequent period is often painless. Sometimes ovulation is inhibited by basal temperature chart, and sometimes it is not. But even when it is not, very frequently the period that comes after androgen therapy is painless.

Still another way of inhibiting ovulation for this purpose is with the use of progesterone. Now, progesterone given in the preovulatory phase will also inhibit ovulation. Some of the new progesterone compounds are especially effective in inhibiting the pituitary. I am speaking now of Norluton, a Parke Davis product, and Enovid, made by Searle, which are the two new potent oral progesterone compounds. One can give ten milligrams a day, beginning as soon as menstruation is over and give it for twenty-one days. Ovulation is inhibited. The patient has bleeding from a progesteronic endometrium, which is often painless but it is not as universally painless as you get with estrogens. But for the patient in whom it works it has this great advantage. You can give it month in and month out. The pituitary does not seem to escape in those instances.

Other Hormonal Therapies

Now, in addition to these methods of inhibiting ovulation, there are several other types of hormonal therapies that can be used to overcome uterine colic. Androgen given late in the cycle seems to have some effect in some patients. For this purpose one has to give 25 to 50 milligrams of testosterone propinate by injection about three days before the expected period. In some patients this will work; in other it will not.

Still another hormone which is sometimes valuable is Relaxin. As you know, Relaxin is a water-soluble steroid hormone of the ovary, in its pure form extremely expensive, but some impure preparations are available for oral use such as Nutrexin. Nutrexin comes in tablets of 1,000 units and two or three tablets given every three hours for four doses just before the onset of menstruation will also sometimes inhibit uterine contractions.

I said before that hormones are also valuable in the selection of patients so far as their diagnosis is concerned. We find that — and many others have found — that if you give patients estrogen, in adequate dosage, such as Premarin two and a half milligrams twice a day, and then the subsequent bleeding is painful, instead of painless, despite the fact that basal temperature charts show that ovulation was inhibited, then to my mind that usually means that the patient does not have the ordinary type of primary or essential dysmenorrhea; it means either secondary dysmenorrhea due to an organic factor you have overlooked, which you should now go back and restudy, or if you can't find that, it means that the dysmenorrhea is on a psychogenic basis, and the very fact that the patient bleeds is enough to induce the psychosomatic syndrome which Dr. Fischer has described.

It is helpful then in making a selection of patients and helping you to decide which one should and should not be treated certain ways. It is also helpful in selecting which patients, if any, should have surgery, and no doubt Dr. Stern may speak later about the use of surgery in intractible cases of dysmenorrhea. Certainly the patient who does not get relief from estrogen is not a good candidate for surgical therapy because she has a very good possibility of having a psychogenic basis and will simply develop a new type of symptom complex surgery will not be of any help in her case.

There has been another new facet, I think, which has been of great interest to the endocrinologist in this interesting symptom complex, and is the role of Oxytocin. All of us know that Oxytocin is a uterine stimulant. It stimulates uterine contractions, and we would therefore expect Oxytocin if anything to aggravate dysmenorrhea. Yet some very good studies recently have shown that Oxytocin given by injection to the dysmenorrhea patient will relieve dysmenorrhea for several hours; whereas Pitressin will markedly accentuate dysmenorrhea. This brings out the vascular factor in dysmenorrhea. Pitressin produces of course vasoconstriction. Oxytocin, even though it induces uterine contractions, induces vasodilation of the uterine blood vessels, which indicates then possibly, that in dysmenorrhea we have an organ which is ischemic, and that when this ischemic organ goes into contraction we have pain due to contraction of an ischemic structure, and that for that reason, therefore, Oxytocin would be a medication which would relieve dysmenorrhea, Pitressin one which would aggravate it, and therefore there is a big hunt on now for substances which have an anti-pitressin-like activity as a logical medication in the treatment of dysmenorrhea.

So you see that there are a number of very interesting facets to the endocrinology of dysmenorrhea.

Chairman Stern: Thank you, Dr. Rakoff, for that very interesting discussion.

Before we open the panel up for discussion from the floor, I think it might be wise to review briefly some of the surgical aspects of the treatment of dysmenorrhea.

The Stem Pessary

Years ago the stem pessary was quite a factor in the treatment of this condition. Then because of the fact that it caused a severe endocervicitis, it was thrown to the side. But recently it has returned in the treatment of dysmenorrhea because Reynolds has shown that the stem pessary, which is inserted and left in place for a matter of several months, causes mitosis and definite enlargement of the muscular cells of the uterus, even more quickly than does estrogen itself.

Therefore frequently the stem pessary in the hypoplastic uterus can cause enlargement and in that way produce regular groups of contractions rather than individual isolated contractions which they believe occur in the hypoplastic uterus. This frequently can be of benefit. We know definitely that cervical dilation in 81% of all cases does relieve primary dysmenorrhea.

The factor here, of course, relates to the same principle that child bearing will relieve 81 to 85 per cent of all primary dysmenorrhea. The factor here is the disruption of the nervous impulses rather than opening up the canal. We know that obstruction per se is not a factor today. It is rather a factor of destroying the end plates in the cervix and the surrounding tissue by forceful dilatation of the cervix.

Lastly, we must consider and correct retroflexion of the uterus before considering more formidable surgical procedures such as presacral neurectomy. But now we arrive at the factor of when to do a presacral neurectomy.

This question has many facets. There are many schools that agree that it should be done in only certain cases. There are other schools that say it should be done as a routine in every case in which the patient has dysmenorrhea and the doctor has to go in and do some pelvic surgery. How to choose the patients that you operate on, Dr. Rakoff has brought out. If they are relieved with estrogen, most of these patients will respond to presacral neurectomy.

Anderson, in Toronto, uses a different test. He gives his patient sodium amytal in the office intravenously, waits three minutes. If the patient says that she is relieved of her pain, he considers it a pychosomatic. If the patient is not relieved he believes that she is a candidate. That I have had no experience with. Possibly some of the members on the floor have.

In doing a presacral neurectomy I would like to go into two factors. Dr. Phaneuff at the Tri-City meeting in Boston in 1950, in reviewing eighty-six cases in which he did presacral neurectomy, brought out the factor that unless a wide presacral neurectomy is done — by that I mean that the vessels are stripped, the ureter, etc. — there is no definite guarantee of results. He also brought out the fact that in doing this, one should strip down only so far and not below the promontory of the sacrum, because by doing such, possibly danger or damage to the bladder function and bowel function can occur.

With these few words I would like now to turn over the meeting for discussion from the floor. Are there any questions?

Dr. Levinson: Some of the older books make mention of exercises in the help of dysmenorrhea. I would like to know if you men feel that this is of any help.

Also the uterine suspension which is frowned upon largely today, do you ever feel there is a place for that today? And also I would be interested to know in the practice such as Dr. Rakoff's, how often he feels that he finds candidates for presacral neurectomy or ovarian neurectomy and so forth.

Exercises to Alleviate the Condition

Dr. Rakoff: First of all, so far as exercises are concerned, I think it has been a common observation among girls who are athletes and ballet dances and so forth, that if they exercise vigorously the day before their menstrual period is due, they are much less likely to get dysmenorrhea, and some of them have noticed this so strikingly that they do that as a routine. And that has been the basis for the so-called billig exercises. Dr. Lee Gollip in Philadelphia has been running a clinic among the high school girls, and he has instituted these billig exercises, which are exercises for tilting the pelvis forward, backward and sideward, during the pre-menstrual phase, and he has found that an appreciable number of them, not all, but an appreciable number seem to be benefited.

He has been very interested in why this works. He believes that in some of these patients, at least, that the ileohypogastric nerve comes out in between the muscle instead of on top of the rectus muscles, and that in the pre-menstrual phase there is edema which presses on these muscles, and that that may be a factor. Just how exercise helps this I am not quite certain.

Now, so far as the number of cases that I see that are candidaes for surgery, I think this varies somewhat in the community you are in and how you are oriented. In Boston they seem to find many patients that should have presacral neurectomy, and it is a very popular operation in Boston. In Philadelphia it seems to be a very uncommon operation.

I think a lot depends on just how willing you are and how conscientious you are to find some conservative method of treatment first, and whether you are willing to exhaust all the possibilities. I think that if you go through the list of things with the patient, that almost always you can find some combination of therapy which will be satisfactory to tide that youngster over for a while, and then you hurry up and encourage her to get married and have a baby, which is the best cure of all.

But I personally have only seen two or three patients in the many thousands in the last ten years that required presacral neurectomy as the only out for this condition.

Are there any other questions?

Dr. Chavin: Isn't it true that if you give a hypodermic of one cc. of Demerol at the height of dysmenorrhea, which is about the first day, the dysmenorrhea does not return for the rest of the period, for five or six days?

Dr. Rakoff: To most patients that have dysmenorrhea, it is only the first day usually which is intolerable, and it is true that Demerol will relieve or carry patients through that first day. However, I think it is not a good thing to get the patient into the habit of calling the doctor each mnth for a shot of Demerol, because many of us have seen patients who have gotten pretty fond of this type of therapy. I think it is something that might be all right once for an emergency, or for special circumstances, but certainly not for routine therapy.

CHAIRMAN STERN: Thank you, Dr. Rakoff.

Are there any other questions?

DR. SLOVIN: I would like to ask Dr. Fischer what is the psychiatric approach to the treatment of a patient who is referred to the psychiatrist for dysmenorrhea. Do they go into analysis or just exactly what is done and what is the percentage of good results?

DR. FISCHER: I guess the vast majority of patients that are referred to psychiatrists with dysmenorrhea are really being sent for pretty deep and complicated personality problems of which dysmenorrhea is the present symptom. If the symptom is seen first and early by a general practitioner who is interested in talking about emotional problems, some very gratifying and remarkable things can happen which will benefit a number of patients.

Actually when you ask the question of statistics, I can't give you these. My own experience with dysmenorrhea, patients with dysmenorrhea, who come either primarily for that or have dysmenorrhea along with other conditions, have certainly indicated that the results of effective psychiatric treatment apparently give much more gratifying and prolonged relief than many of the treatments I have heard here discussed. I suppose it is both a good thing and a bad thing that so many treatments influence this symptom. But again if we are going to be physicians on a sound basis, we have got to do more than treat symptoms. We have got to treat causes. And until the psysiologist can get down a little more to the question of causes and sources, then I suppose we will treat it on the basis of what our main interest is in, are we surgeons, are we internists, are we psychiatrists or endocrinologists?

Now, the treatment these days, psychoanalyses is reserved for very special cases, you don't psychoanalyze the average patient. It is too formidable in time, cost and effort. On the other hand, we are trying to develop a goal directed psychotherapy that does assist in short range problems. This won't take disturbed, mixed-up persons and change them into brand new people by any means; but we are trying to learn a psychotherapy that is applicable in maybe five or ten visits and make significant changes. This is difficult, but I would think we are gaining on it.

I would say, first, the local physician who sees the patient should spend a little time seeing whether there is some emotional problem directly related to this, and frequently he would be quite surprised and gratified as to what can happen with a very little bit of time aimed in this area.

CHAIRMAN STERN: Are there any other questions?

DR. REPMAN: Dr. Rakoff recommended the use of estrogen for treatment of dysmenorrhea every other month. I recall Dr. Emil Novak frowned upon the use of estrogen, especially in menopausal women on account of the enlargement of the uterus, and so forth. Do we have partially the same thing in the treatment of your therapy?

DR. RAKOFF: First of all, we are dealing with young women here so we don't run into exactly the same contraindications or fears of prolonged estrogen therapy as you would in the woman who is approaching menopause, when she is getting into the so-called cancer age. I know of no young woman in whom cancer was induced by estrogen therapy. On the other hand, I do think that continued estrogen therapy has certain drawbacks, mainly the inhibition of the pituitary and the ovary. When it is given every other month I have not found it to be harmful. The pituitary and ovary have always bounced back, and the in-between months have been ovulatory.

So I think when used every other month it is, shall we say, less undesirable. I admit that this is not the treatment of choice, but I don't know of any treatment of choice for dysmenorrhea.

For the intractible case it is one way out and I think that used every other month, you are not likely to get into difficulties. Once in a while you will meet a young dysmenorrheic girl to whom you give estrogen in this fashion, who has hypoplasia of the uterus, in whom your estrogen therapy produces a better developed uterus, who may then go on for six or eight months and be free of her dysmenorrhea.

The Psychogenic Factor

While I am here, I would like to comment a little bit on the psychogenic factor, Dr. Fischer, in this sense. I think all of us who deal with functional disturbances in gynecology have been extremely impressed with the sensitivity of the pituitary ovarian mechanism to psychogenic factors, and all the different kind of syndromes that psychogenic factors can produce in women, and I would like to point out that sometimes a patient who has severe dysmenorrhea who is otherwise, as far as we ordinary doctors can tell, psychogenically all right, and becomes emotionally disturbed, may develop a pituitary ovarian disturbance which cures her dysmenorrhea; that is, we know that emotional factors can produce a non-ovulation. And with the anovulatory cycle the dysmenorrhea may go. I am not recommending this as a type of therapy to produce an emotional disturb- is one of the things that happens.

Sometimes when we see patients who give ance for the cure of dysmenorrhea. But it us a history of infertility and they tell us that previously they had dysmenorrhea and then more recently, since they are married, for instance, their dysmenorrhea has disappeared, we are very suspicious that they have develepd an anovulatory infertility as a result of psychogenic problems.

Chairman Stern: Thank you, Dr. Rakoff.

Are there any other questions?

Dr. Cannon: I have two questions, one rather frivolous. What is the derivation, Dr. Fischer, of "off the roof" as a vernacular? In urology we have a lot of vernacular expressions that are quite interesting. I was wondering if you could enlighten us on that.

Secondly, what is the relation of dysmenorrhea and alcoholism in women, because I have known from a few experiences, patients who resorted to alcohol as a method of relief; whether that has psychogenic overtones or whether it is an effective measure of therapy.

Dr. Fischer: I am afraid you are going to be disappointed in the answers to both of your questions. The first is, we spend a good deal of time trying to understand the symbolic meaning of little phrases that people use, and of course most of the phrases that are used to designate menstruation are fairly obvious. The one about the "off the roof" still has me puzzled, and I have a large group of women that are hunting to give me the answer to this. I don't know where it came from.

Incidentally, those of you that get the Encyclopedia Britannica know you get a group of fifty stamps that you could send in for research studies of cultural and social things. I use them quite frequently. There are many things in my business I have to turn to, and maybe I will ask whether Encyclopedia Britannica can help me with that one. I don't know where it started, but it has developed and it must have some basic symbolic meaning. It has caught hold, and these things that are generally popular do have some symbolic foundation, but I don't know what it is.

Dr. Cannon: "The curse," I know that is used.

Dr. Fischer: Yes, "the curse."

The second question about the relationship of alcoholism to dysmenorrhea, I don't know; I have never studied the two directly, and I suppose those who have studied alcohol primarily could tell about it. I think women frequently have their own methods of treating their own dysmenorrheas, and whether it is the hot water bottles or special foods or so forth, they have their own little tricks, just as well as we have these scientific tricks for trying to handle it. But I can't give you a definite answer.

Dr. Rakoff: Gin is a very common thing.

Marriage and Pregnancy

Dr. Hynes: I am not sure to which member of the panel to address this. It might be the psychiatrist or the endocrinologist or even to the surgeon who prescribes exercises. What is the reason that many patients with dysmenorrhea are relieved by marriage, not including pregnancy, just by marriage?

Dr. Fischer: I think it is psychological, and I think the difference is a difference in emotional investments, that the girl who has her menstrual period as a central emotional investment is preoccupied with the thing. When she has sexuality, babies and other things, her emotion gets changed around a little bit.

I included as a part of the paper here some verbatim words by one of these women who had severe dysmenorrhea, then trouble, and habitual abortions and so forth, and I think the answer probably has to do with difference of emotional investments. I might also say that if Dr. Rakoff got up in one of my classes and said he advocates pregnancy or marriage as a therapeutic thing, I would say, "That is declaring war." While this is another social maneuver that may influence a symptom, it raises far more problems than it solves. And it is this kind of stuff that is going to give a psychiatrist more patients than he can handle.

Dr. Frelick: Dr. Fitchett, I believe, is the only one who discussed premenstrual tension as part of dysmenorrhea. I was wondering whether these two are related and if so what the correlation is.

Furthermore, I would be interested in the psychiatric treatment of premenstrual tension, whether psychotherapy is of value or whether the hormones are — diuretics may be of more value. I think the disturbed woman who can be helped by medicine is a very dramatic finding, and is the help to be given to these people only psychotherapeutic or are we going to do other things?

Dr. Rakoff: Well, in young women there is an association between premenstrual tension and dysmenorrhea, because, as I pointed out, the woman with dysmenorrhea is secreting more steroid hormones. She is making adequate amounts of both estrogen and progesterone, both of which tend to cause fluid retention, and both of which would favor the syndrome of premenstrual tension as a result of fluid, salt and water retention.

So I think that there is this relationship between the two. And there are some investigators who feel that it is the salt and water retention which may produce a pelvic neuritis, so to speak. I have always been fascinated by the fact that some of the surgeons who remove these bits of nerve tissue at presacral neurectomy claim that there is a perineural neuritis in the nerves that they remove.

Chairman Stern: I might add that we have talked about presacral neurectomy. There are certain types of menstrual pains that presacral neurectomy does not relieve. Only by cutting the plexus in the infundibulopelvic ligament is the so-called ovarian dysmenorrhea relieved.

Are there any other questions?

Premenstrual Tension

Dr. Dewees: In line with what Dr. Frelick has said, in my own experience a lot of these girls who have premenstrual tension do not have very bad menstrual cramps, but they feel terrible and they are hard to get along with, and nobody can do anything right or fast enough for them in the three or four or five days before their period. If you put them on the scales every morning a lot of them will be shown to gain two or three pounds during this period. But in my experience a lot of those girls don't have very bad cramps. Many of them I think are helped by diuretics, but I wonder as diuretics, is it the diuretic or is it something else that you are really doing for them? And I am not quite sure that we got an answer to that part of the question.

Dr. Fischer: I think many of these women are quite sensitive about the bodily changes that occur in the course of the menstrual cycle. Theresa Benedict did some work on ~~this, and~~ many women can feel when they are ovulating and many women can predict almost immediately as they approach menstruation. They get quite attuned to the bodily sensation and unquestionably all these bodily sensations do have disturbances and changes both physiologically and pathologically in a variety of these endocrine and chemical balances. I would say that it seems to me, though, a sine que non has to be a fear and a conflict in the approaching cycles that go along with them.

So I would say that irrespective of what symptoms you treat to return the body to more normal functions, where there is fluid accumulation or what, I would like to do a little talking to them, too, in which case I would just try to make a rational therapy that treats both sympoms and causes, and if definite symptoms occur, then I am in favor of treating them, but at the same time adding a little talk and a realization that emotions about these things frequently and most often do play a pretty crucial part.

Chairman Stern: I think on this matter of premenstrual tension — do you have anything to say on this, Dr. Fitchett, what you have done with them?

Dr. Fitchett: No, other than to say I think it is just as much a problem as dysmenorrhea, and very frequently in these cases edema is a factor in causing their discomfort, and by relieving their edema, along with the talk Dr. Fischer would give them, I think we do help them each period.

I think it is important to treat their symptoms, and I think that the symptoms of premenstrual tension are probably easier treated and more readily helped by medication than they are in dysmenorrhea.

Chairman Stern: Dr. Rakoff, do you have anything specific to say about your treatment of this condition?

Dr. Rakoff: Dr. Dewees, one point I did want to make is that of course not all patients with premenstrual tension have dysmenorrhea, nor do all patients that ovulate have dysmenorrhea. That is the whole crux of the situation. Why do some patients who have normal ovulatory cycles have dysmenorrhea and others who are apparently equally normal endocrinologically don't? That is why I said before that we don't know the true endocrine answer to dysmenorrhea. There is something there that ovulation facilitates, but we don't know what it is because it is present in some women and not in others.

So far as premenstrual tension is concerned, I think that the majority of these patients can be helped by a salt-poor diet in the premenstrual phase plus diuretics, as Dr. Fitchett pointed out, either ammonium chloride, Diomox, Neohydrin, or Neo Bromth. Some patients respond better to one, some better to the others.

Now, with a patient with sort of intractible premenstrual tension which does not respond to these measures, which is unusually severe, and there are patients who gain as much as eight pounds in the premenstrual phase, these people are often benefitted by 10 milligrams of methyl testosterone for ten days before their period.

Chairman Stern: Thank you, Dr. Fitchett and Dr. Fischer.

Dr. Levinson: Dr. Rakoff twice stressed the fact of giving estrogens every other month. What about the patient with severe endometriosis that might be treated by the Karnaky regime of giving progressively large doses of estrogen over a period of some months? Am I correct in assuming you are definitely opposed to that?

Dr. Rakoff: I personally don't like estrogen therapy for the treatment of endometriosis, because this is based on the fact you are first stimulating the endometrium and then exhausting its ability to respond. So before the patient gets better she has to get worse. And I have run into too many problems during the stage in which they are getting worse. You have to give the estrogen continuously there and you can't discontinue it. Once you discontinue you are in trouble. The patient begins to bleed, the endometriosis flares up. You have to inhibit the cycle by giving estrogen in large doses over a long period. I prefer androgen for this purpose, giving it cyclic fashion. Keep the endometriosis in control over a young woman where you want to be conservative. More recently we have had some interesting experience with the new progsterone compounds; they are giving it continuously inhibiting the cycle. We haven't gotten into any difficulty. We have been giving 20 to 30 milligrams of Noritin in a day, and we seem to be getting very encouraging results. But it is a little too early for me to say.

Chairman Stern: I want to thank Dr. Fitchett, Dr. Fischer and Dr. Rakoff for coming down here and giving us this interesting discussion, and I would like to thank the audience for entering into this discussion.

SAFE KEEPING OF MEDICAL CREDENTIALS

The services of a Central Repository for Medical Credentials became available July 1, 1958 to doctors all over the world. Many doctors today are unable to utilize their professional skills because of the loss or destruction of their original credentials. The World Medical Association undertook this program to assure that the doctor will always be able to prove himself medically trained and fully accredited to practice medicine.

Lifetime cost of this service to the newly graduated doctor in the United States is approximately $60.00 on a one-payment basis. An actuarial schedule has been established for doctors in various age groups. A ten-year service rate is also available.

Repository officials suggest that the credentials deposited should include official medical school record, medical diploma and specialist credentials. Doctors should NOT send their original credentials, but should send photostatic, microfilm or notarized copies of their original credentials.

Forms and additional information are available from The World Medical Association, 10 Columbus Circle, New York 19, New York.

● This article is based on an investigation of the records of individuals from the three institutions who have been adjudged delinquent. It does not assume that a truly representative random sample of the population at large is involved but provides some information regarding reading disability among this select population.

A NORMATIVE STUDY OF READING DIFFICULTY IN DELINQUENTS

Leon Petty, M.S.*

A considerable proportion of the adolescent population examined at the Mental Hygiene Clinic have been involved in some type of activity which may be designated as delinquent in nature. This delinquent behavior covers a variety of transgressions against the social pattern and undoubtedly is multicausal in origin. Many institutions, i.e., family, school, etc., play a dynamic role in the socialization of the individual, thus helping him to adapt to his environment. However, personal and social maladjustment of the child is intimately linked with his emotional adjustment.

Reading Deficiency a Link

In examining adolescents referred by institutions because of delinquent behavior, it becomes obvious that many of them experience a similar problem, namely reading deficiency. In effect they are or have been laboring under some disturbing emotional stress which has hampered social adjustment and which may or may not have precipitated an attempt to find other avenues of achieving satisfaction.

The nature of the emotional stress experienced by a child beginning school are enormous, yet many adjust or adapt readily to the procedures. Why, then, do some children become behavioral problems, while others adjust with a minimum of conflict? Again a multicausal approach seems to be the answer—with environmental background, personal adjustment and the school curriculum as partial reasons for failure. Some children approach school entrance with confidence, poise, cheerfulness and a cooperative attitude while others are relatively immature emotionally. They are timid, shy, self-centered, un-cooperative in routine school activities, unable to get along with others and are easily upset emotionally. Thus, inadequate emotional stability, insufficient self-reliance and inability to cooperate, may handicap a child in his effort to learn to read. However, emotional factors alone are not the only reasons for reading disability. Other factors, i.e., intelligence, physical, social and educational may affect the child in his effort to learn to read. This inability to learn to read leads to frustration which may be manifested in a variety of ways.

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The Vicious Circle

The severe frustration experienced by the child in his unsuccessful effort to learn to read makes him conspicuous in a socially unfavorable way—he is hurt and ashamed. The continued lack of success with concomitant and a feeling of insecurity may bring on emotional maladjustment. A particular child may develop feelings of inferiority, i.e., feeling of being stupid which may be enhanced by the attitudes of classmates, parents and even teachers, if they fail to understand the true situation. Reading and school activities become disliked and the child seeks opportunities to avoid it. A variety of techniques may be employed, such as—becoming withdrawn, indulging in excessive daydreaming, developing nervous habits (i.e., nail biting or appearance of hysterically motivated illness) or compensation for feeling of inferiority in the form of antisocial behavior.

Mean difference between reading achievement actual grade placement and estimated reading expectancy (theoretical grade level):

RESULTS

The subjects achieved intelligence quotients ranging from the borderline level of intelligence to the superior level of intelligence. Table one gives a distribution of the quotients by sex.

Table I—Intelligence Quotients

	70-79	80-89	90-109	110-119	120 & Above	
Male	7	6	16	1	2	=31
Female	6	1	11	1		=19
	13	7	26	2	2	50

Table two summarizes the mean difference between the actual grade placement and the achievement and theoretical grade level.

The sample consists of 50 cases of children ranging in age from 8:4 to 16 years of age. They were selected at random from subjects under the auspices of the Youth Service Commission. All had been administered some form of intelligence test and the Wide Range Achievement Test.

The reading grade achieved on the achievement test ranged from 1.4 to 11.1, while the actual grade completed in school ranged from grade 2 to 11. However, the expected grade (theoretical grade) yielded a range of 3.2 to grade 12.8. The mean difference between the actual grade placement of the achievement test grade varied from 0.3 to 6.0 grades of reading disability. The discrepancy between the grade placement and the theoretical grade varied from 0 to 9 years of reading retardation.

The significance of the above results indicates that over half of the sample show a significant discrepancy (more than 1 year of reading retardation) between the achievement test grade and the actual grade placement. This discrepancy becomes accentuated when one considers the grade expected of the individual (based on the number of years in school) and the grade placement. In the latter case, approximately 90% of the sample show more than 1 year of reading retardation. Although the intellectual level (other conditions being equal) of the individual affects his reading ability, the variation for the population sampled was greater in those subjects with average than those with below average intelligence—even though most of the latter group were placed in grades above their achievement level. As could be expected, subjects with above average intelligence showed the least

TABLE *II*

No. of Yrs. Retarded	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9
Achievement Test Grade	15	10	10	3	10	1	1	0	0
Theoretical Grade Level	5	8	6	6	6	8	4	6	1

amount of variation between actual, achieved and theoretical grade. The disability, although varying with intelligence, is widespread for the group studied and perhaps more prevalent in boys than in girls.

Although a large proportion of the sample achieved intelligence quotients below the average range, their actual and expected grade levels reflect their inability to learn to read which differed from the average and above average only in the respect that the latter group showed a greater range than the former in terms of retardation. With increasing levels of retardation, greater frustration and acting out behavior was exhibited by the group with average and above average intelligent quotients.

In the beginning of this article, mention was made of the role of the family in the socialization of the child. Information gathered from the records indicates that 75% of these idividuals studied are products of broken homes, clearly illustrating the assumption.

SUMMARY

Fifty records of children placed in institutions because of delinquent behavior have been examined psychologically with the following results:

1. The vast majority show a typical pattern of reading disability.
2. Discrepancy between expected grade and achievement grade varies from 0 to 9 grade levels of reading retardation which shows a greater amount of retardation than the discrepancy between actual and achieved grades.
.3 Discrepancy between those of below average I.Q. is not as great as that for average and above average I.Q.
4. There appears to be strong indications of a positive correlation between home milieu or condition and learning disability.

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The Physician and the Public Schools

It is well worth the private physician's time to consider the results of school testing and evaluation procedures. A child seen infrequently for organic illness may be understood in a quite different light when such results, arrived at by people seeing the child daily over a period of years, are given due weight. . . .

. . . . As physicians, we need to be aware of the health and paramedical programs designed to improve the scholar's total school and community adjustment. If services are lacking, if particular school systems are failing to offer speech and hearing training and sound psychological and guidance services, physicians should take an active part in furthering the development of these areas in their respective communities. Active participation on school health councils, or in P.T.A. or other activities by private doctors can aid immeasurably in securing needed special services.—Norman C. Chaucer, M.D., in Connecticut Medicine.

● Diagnosis and successful therapy is often difficult in this stubborn condition, frequently found in patients. The author recommends Trypsin troches as an adjunct to treatment in obstinate cases.

CHRONIC POSTNASAL DISCHARGE

Abram H. Persky, M.D.*

Chronic postnasal discharge, or postnasal drip, as it is more commonly termed is one of the most frequent and troublesome complaints seen by the physician. This drip may be purely on a physiologic basis as a natural result of the normal physiologic action of the cilia, in their capacity of sweeping backward and downward into the posterior nasopharynx, any bacteria, dust, foreign bodies, powders, or any other substances that may be inhaled. However, just as there are degrees of the amount of postnatal discharge, so are the symptoms in direct proportion to the amount discharged. There are also many characteristics to the discharge which require a careful consideration, both from the standpoint of prognosis and of treatment. A true simple postnasal discharge is nonpathologic and normal to a degree. However, this discharge may have developed purulent characteristics which speak of an infective process somewhere in the upper respiratory tract. In consequence, this type of a discharge may have some pathologic significance not only from a local standpoint, but also from systemic reactions.

To better understand the modus operandi of the postnasal discharge, it is important to review the physiology of the mucous membrane of the nose. There are two primary functions of the nasal mucosa, namely, to humidify the inspired air and to warm it to the proper temperature, so that when it reaches the posterior pharyngeal spaces and the lungs, it is non-irritant and can be tolerated by the lower respiratory areas. Passage of inspired air through the nasal cavity from the nares to the posterior choanae required less than ¼ of a second. When it reaches the pharynx, the relative humidity of the inspired air is about 75% or more. The turbinates are well adapted to the function of radiating heat, thus the inspired air is warmed by the nasal cavity up to a temperature between 36 and 37 degrees C.

The amount of water secreted by the nasal cavity in each 24 hours is close to one quart. The mechanism by which moisture is supplied to the inspired air is still subject to speculation. Some investigators believe that the moisture is supplied by the nasal secretions, while others maintain that it is supplied by a serous exudate from the capillaries and the vessels of the mucous membrane. The cilia have a mucous blanket which, due to the ciliary activity, in a general way moves backwards towards the nasopharynx. This blanket is adapted to trap dust, bacteria, powder, etc. and it carries these foreign bodies at various speeds to the nasopharynx.

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Various factors can act to either accelerate or delay the movement of the cilia. Environmental factors, emotional disturbances, various types of irritants that may be inspired, various medications that may be taken either internally or applied locally, all can have an influence on the rapidity of this ciliary action. Slowing the ciliary motion would normally cause a stagnation of bacteria and foreign particles on the mucous membrane of the nose. This, in turn, would cause a greater opportunity for an absorption of the toxic substances into the blood stream of the mucous membrane and a development of a purulent process. Certain pathologic conditions in the nose and throat, and certain systemic conditions may have either a direct or indirect influence on the normal function of the cilia. Among these, one may state anatomic malformations, such as a marked deviation of the septum, wherein there is so much narrowing of one nostril, that the inspired air on that side does not have a proper opportunity to reach the turbinates and, consequently, cannot be moistened nor warmed with the result that foreign organisms or foreign matter that may be present on the cilia, do not have an opportunity of being driven back into the nasopharynx. In the other nostril, there may be an increased patency due to the marked concavity of the septum with the result that too much air is inspired from this nostril, and in consequence, there is the drying of one side of the pharynx.

Postnasal discharge may be the result of acute or chronic sinus disease. It may be the result of a hypertrophic rhinitis. It is often seen in cases of atrophic rhinitis. The presence of diseased tonsils and adenoids very frequently gives a purluent postnasal discharge with the sensation of hawking and coughing. Allergic states are important. True allergy of the nose rarely produces a simple postnasal drip. However, due to the marked congestion of the mucous membrane of the nose during an allergic state, there usually is associated a more or less purulent discharge due to the stasis of the cilia and a secondary infection.

Infected lymphoid tissue in the nasopharynx is an extremely important source of this postnasal discharge. This is particularly true in adults where there may be islands of hypertrophied lymphoid tissue either on the posterior pharyngeal wall, in the nasopharynx, or a hypertrophy of lymphoid tissue on the base of the tongue. Small residual tonsillar tabs may maintain a chronic infection and add to a chronic postnasal drip. Other causes that seem to influence a postnasal drip may be the excessive use of alcohol and tobacco, improper diet, and very often inadequacy of rest. Systemic influences, such as diabetes, malnutrition and hormonal imbalances have been associated with this condition. There may be other causes such as smoke, dust, various types of fumes, odors, extreme temperature changes, various types of plastic materials that are being processed in various areas, all have an influence on increasing the postnasal drip. Drugs have also a direct relationship, particularly, the newer preparations that have been used by the hypertensives, such as serpasil, etc.

Symptomatology

The common symptom is that of hawking, or sensation of either a lump in the throat, or of swallowing a discharge, a marked cough, very frequently in the morning, with or without expectoration, irritation of the throat, choking sensations, and frequently hoarseness. Strenuous hawking and attempting to remove this plug of mucous may occasionally produce a certain amount of blood spitting. Nausea and vomiting is not an infrequent complaint. The discharge may be either purulent or non-purulent.

Diagnosis

It is often extremely difficult to establish either the diagnosis or the etiologic factors that present this symptom. In spite of a detailed examination, frank abnormality is often absent. To supplement a careful and detailed history, the following procedures are in order:

Anterior rhinoscopy with nasopharynscopy, posterior rhinoscopy, transillumination of the sinuses to be supplemented by roentgen examination. A mirror laryngscopy will reveal important findings, both on the dorsum of the tongue, the supra glottic, and the laryngeal areas. It is important to rule out the presence of a Thornwald's bursa, lymphoid masses on the posterior pharyngeal wall or on the dorsum of the tongue, the presence of diseased tonsils of tonsillar tabs and residual masses of adenoid tissue.

In addition, the local findings are often inconclusive, and a recourse to a detailed medical review is indicated to evaluate the influences of either systemic, environmental, emotional or other functional factors that may have either a direct or indirect influence on the patient.

Treatment

Treatment must be directed to the underlying pathology—measures employed will include: 1) conservative medical treatment to the nose and throat; 2) surgical measures; 3) radiation; 4) systemic measures and 5) Trypsin.

Conservative medical treatment is indicated in acute and chronic sinus pathology, hyperplastic ethmoiditis, and atrophic rhinitis. Intra-nasal medication should be of a bland, non-irritating nature whose pH is that of the normal nasal secretions. The medication may be administered either in the form of drops, sprays or by the displacement method. The addition of the antibiotics to the solution is of questionable value. In cases where there is a moderate proliferation of lymphoid tissue on the pharyngeal wall, local application of a 2-5% silver nitrate solution may be beneficial. Gargles are of little value, but may have a psychological effect. Certain drugs such as iodides or ammonium chloride taken internally may help liquefy the secretions and so reduce the severity of the symptoms.

Surgical measures include antral lavage, polypectomy, a partial middle turbinectomy, the removal of mulberry growths on the posterior ends of the turbinates, submucous resection, excision of a Thornwald's bursa, tonsillectomy and adenoidectomy, excision of the recurrent lymphoid tissue in the nasopharynx, in the pharynx, or on the dorsum of the tongue.

Roentgen therapy: This form of therapy has limited value and when used extreme care must be exercised since late side effects have been reported. It can supplement surgery in cases of extensive lymphoid hyperplasias.

Systemic medication should be directed to control diabetes, correct metabolic disturbances, hormonal imbalance, and malnutrition. Attention should also be directed to the diet, excesses of alcohol and tobacco, and any environmental or emotional states that may be present. Allergy, if present, should receive intensive anti-allergic treatment.

A number of cases of chronic purulent discharge exhibit only a lymphoid hyperplasia. In spite of the therapeutic measures outlined above, the results were unsatisfactory. In reviewing the literature, it was found that Trypsin* given parentally had a beneficial action in liquefying the secretions in cases of chronic bronchitis, bronchiectasis, and asthma. In consequence, a special troche was prepared containing Trypsin 1.0 mgm., Benzocaine 5.0 mgm., Neomycin sulphate 5.0 mgm. and zinc Bacitracin** 50 units.

These troches were administered to a group of 19 patients, who presented a history of chronic purulent postnasal discharge of varying duration and severity. The associated symptoms included hawking especially on arising, cough, tightness and irritation in the throat, and often a choking sensation. The patients were all in the older age group. Frank sinus abnormality was absent in the entire group. With one exception, they all presented varying degrees of a chronic nasopharyngitis with a lymphoid hyperplasia in the nasopharynx, pharynx or on the dorsum of the tongue.

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*Parenzyme Aqueous (National Drug Company).

**National Drug Company.

Table I

No.	Name	Age	Sex	Symptom	Diagnosis	Dose	Results	Comments
1	W.	46	F	Postnasal drip, choking sensation, cough.	Chronic nasopharyngitis	1 q 4 hrs.	Poor	No improvement after 2 weeks—no side reactions.
2	G.	57	M	Postnasal drip, lump in throat.	“ “	“ “	Good ++	Much improvement—no side reactions.
3	P.	62	M	Postnasal drip, cough in A.M., tightness.	“ “	“ “	Good ++	Improvement—mucous freed—cough absent—no reactions.
4	H.	60	M	Choking sensation, postnasal drip, hawking.	“ “	“ “	Good ++	Marked improvement—drip less—no hawking—no side reactions.
5	R.	53	F	Postnasal drip, cough in A.M., and at bedtime.	“ “	“ “	Good ++	Improvement after 2 weeks—no side reactions.
6	A.	54	M	Cough, choking sensation, postnasal drip.	“ “	“ “	Good ++	Much improved—no side reactions.
7	O.	64	F	Postnasal drip, tight in throat.	“ “	“ “	Good ++	Loosened discharge—no side reactions.
8	P.	60	F	Postnasal drip, hawking in A.M., thick plug.	“ “	“ “	Good ++	Loosened secretion— no cough—no reactions.
9	R.	55	F	Postnasal drip, cough.	“ “	“ “	Poor	No improvement after 2 weeks—no side reactions.
10	H.	61	F	Postnasal drip, cough, hawking.	“ “	“ “	Good ++	Slightly dizzy—took Rx too often.
11	A.	51	F	Postnasal drip cough A.M.	“ “	“ “	Good ++	Much relieved—no side reactions.
12	C.	59	F	Postnasal drip, cough especially A.M.	“ “	“ “	Good ++	Marked improvement—lessening of discharge—no side reactions.
13	B.	45	F	Postnasal drip, choking sensation.	Vasomotor Rhinitis	“ “	Poor	Developed nausea—stopped Rx after 3 days.
14	R.	49	F	Cough, tightness in throat, Postnasal drip,	Chronic nasopharyngitis	“ “	Good ++	Marked improvement—1 week—no side reactions.
15	S.	36	M	Postnasal drip. cough expectoration.	“ “	“ “	Good ++	Loosened secretion—no cough.
16	McD.	70	M	Postnasal drip, cough expectoration.	“ “	“ “	Good ++	Marked improvement—drip less—no side reactions.
17	J.	55	F	Hawking, cough expectoration.	“ “	“ “	Good ++	Loosened secretion—no cough after 2 weeks—no side reactions.
18	S.	52	F	Postnasal drip, cough expectoration.	“ “	“ “	Good ++	Discharge less—no cough 2 weeks—no side reactions.
19	C.	41	F	Postnasal drip, cough expectoration in A.M.	“ “	“ “	Good ++	Secretion loosened—no cough after 2 weeks—no side reactions.

Unless otherwise specified, duration of therapy was one week.

The Trypsin troches were administered every four hours for a period of one to two weeks. Sixteen of the nineteen patients reported excellent results, namely, the secretion became looser, the cough disappeared, they felt greatly relieved of their symptoms and did not have any frank side reactions. Three patients had to terminate the treatment, two because of nausea, which developed on the third day of treatment, and the third failed to show any improvement after two weeks.

It is felt that the Trypsin in the troche had an effect of causing a liquification of the fibrin and mucous secretions. The Neomycin and Bacitracin exert a bacteroistatic action, and so reduce the irritative nature of the discharge. It was also noted that after a course of treatment, the lymphoid masses appeared smaller, and even disappeared in certain areas.

Conclusions

1. Chronic postnasal discharge is due to numerous anatomic physiologic and pathologic factors that make both diagnosis and successful therapy very difficult.

2. Attention to the sinuses, the nose, the nasopharyngeal space, the pharynx, tonsils and the base of the tongue is of prime importance.

3. Systemic conditions such as metabolic disturbances, hormonal imbalance, allergic states, emotional disturbances, and environmental influences must be evaluated and corrected.

4. Therapeutic measures should include intra-nasal medication, displacement therapy, antral-punctures, surgery, if indicated, the antibiotics and all other necessary adjuvants.

5. As an addition to the many therapeutic measures, Trypsin troches are recommended in obstinate cases, where there is the thick purulent type of secretion, and where one finds the hypertrophic lymphoid patches either in the nasopharynx, the pharynx, or about the base of the tongue.

Contributors Column

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DIAGNOSIS AND DIFFERENTIAL DIAGNOSIS OF ANEMIA*

● Anemia should always be regarded as a danger signal demanding careful reevaluation of the patient's general condition. It is a symptom which should never be accepted as a diagnosis. The author continues his comprehensive outline on the subject.

ANDREY GEORGIEFF**

TABLE VII

CLASSIFICATION OF MALABSORPTION SYNDROMES

I. Primary malabsorption (primary sprue)

- A. In children
  - 1. Celiac disease
- B. In adults
  - 1. in tropics: tropical sprue
  - 2. In temperate zone: nontropical true (idiopathic steatorrhea)

II. Secondary malabsorption (secondary sprue)

- A. Infiltrative disease
  - 1. Enteritis
    - a. Idiopathic.
    - b. Tuberculous
  - 2. Intestinal lipodystrophy (Whipple)
  - 3. Amyloidosis, scleroderma, etc.
  - 4. Tumors
    - a. Hodgkin's disease
    - b. Lymphosarcoma

DIAGNOSIS AND DIFFERENTIAL DIAGNOSIS

- B. Congenital or surgically produced anomalies
  - 1. Blind loops
  - 2. Extensive resections of small bowel
  - 3. Subtotal or total gastrectomy
  - 4. Fistulas
- C. Endocrine disorders
  - 1. Adrenal insufficiency
  - 2. Pituitary insufficiency

III. Error of Digestion

- A. Pancreatic disease
  - 1. In children
    - a. Cystic fibrosis
  - 2. In adults
    - a. Pancreatitis
    - b. Carcinoma
    - c. Surgical resection
- B. Biliary tract disease (malabsorption usually minimal)
  - 1. Intrapatic: cirrhosis of any type
  - 2. Extrahepatic: common duct obstruction from any cause

In a patient with anemia, in order to determine the possibility that the anemia might be hemolytic, order the following:

Icterus Index (7), *Fecal Urobilinogen* (8), *Urine urobilinogen* (9), Total serum bilirubin — direct and indirect (10), test for free Hb. in the blood and *hemoglobinuria* (11). In hemolytic anemia 7, 8, 9, 10 and 11 are increased. Details will be given further under Hemolytic anemia.

12. *Osmotic Fragility Test.* When normal red blood cells are mixed with descending concentration of hypotonic salt solution, some of the red blood cells undergo hemolysis within the range of 0.48-0.40% Sodium chloride and there is complete hemolysis at 0.3% Sodium Chloride. In hereditary spherocytic anemia (hereditary spherocytosis) there is partial hemolysis in concentrations above 0.40% sodium chloride that is here the osmotic fragility is decreased. In Thalassemia, Sicklemia and obstructive jaundice, hemolysis occurs at levels lower than the control (that is at levels lower than normal). That is here the osmotic fragility of the red blood cells is increased.

13. Test for *mechanical fragility* of red blood cells. Increased mechanical fragility has been observed in congenital hemalytic jaundice, in sickle cells anemia, and in the presence of cold agglutinins, as well as in a few cases of atypical hemolytic anemias in

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*The first section of Part II appeared in the November issue.

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which osmotic fragility was normal are decreased.

14. *Survival time of red blood cells.* Normal red blood cells when transfused into normal recipients exhibit a survival of about 120 days, with a linear slope of disappearance. The survival time of red blood cells may be measured by the method of Ashby, but the easier method of studying the survival of patient's or donor's cells tagged with radioactive chromium.

15. *Warm antibodies* are antibodies which act maximally at 37C. They act as incomplete antibodies. They occasionally act as "complete" agglutinating antibodies and under certain circumstances may cause hemolysis. Although the number of possible causes of hemolytic anemia is large, as the table of Etiologic classification of anemia shows, in a very significant number of cases of acquired hemolytic anemia no cause is found and no associated disease is recognized. These cases are included as idiopathic cases. However, in the majority of idiopathic hemolytic anemias a "warm antibody" is present and the test for warm hemolysin is positive; i.e., the antibody reacts well at 37 degrees C. and is not potentiated at a lower temperature. The most common warm antibodies are "incomplete" that is, they sensitize normal red blood cells to antiglobulin serum but do not cause agglutination in a saline medium.

16. *Test for Cold Hemolysin.* "Cold" antibodies are markedly potentiated by reducing the temperature below 37°C. These antibodies are "incomplete" antibodies but they may also act as "complete" antibodies. There are two tests for demonstrating cold hemolysin: one is presumptive (technically easy test) and the other is done when the presumptive test is positive. This other test is the Donath-Landsteiner test and is more complete (but technically more difficult to perform).

"Cold" antibodies have been demonstrated in paroxysmal cold hemoglobinuria and in some acquired hemolytic anemias. In cases of acquired hemolytic anemia associated with the presence of cold antibodies, cyanosis and Raynaud's phenomenon on exposure to cold as well as hemoglobinuria may be noted.

(In addition to these warm and cold autoantibodies, it is not uncommon to find other manifestations of abnormal protein formation in patients with acquired hemolytic anemia. Thus antibodies may be formed which give false positive Wasserman and Kahn reactions.)

17. *Test for Increased Acid Hemolysis.* This test is positive in paroxysmal noctur-

TABLE VIII. COOMBS' TEST

Hemolytic disorder	Antihuman globulin serum mixed with patient's R.B.C. (direct Coombs' tests)	Antihuman globulin serum mixed with normal RBC after incubation in patient's serum (indirect Coombs' test)	
		Rh+	Rh—
A. Acquired hemolytic anemia:			
1. With circulating antibodies	+	+	+
2. Without circulating antibodies	+	—	—
3. Due to erythroblastosis fetalis	+	+	—
4. Due to physical or chemical agents	±	—	—
B: Congenital hemolytic anemia (hereditary spherocytosis)*	—	—	—
C. Sickle-cell anemia	—	—	—
D. Paroxysmal nocturnal hemoglobinuria	—	—	—
E. Cold hemoglobinuria (type associated with syphilis)	+	—	—

* The occasional finding of a positive Coombs' test in this and in other hemolytic anemias where the test is usually negative is explained by superimposed, frequently transient, episodes of acquired hemolytic anemia.

nal hemoglobinuria. The test is performed by putting the red blood cells in a slightly acid pH with CO_2. The test is positive if hemolysis of the red blood cells appears.

18. *Coombs' Test.* The most commonly employed serologic (immunologic) test is the Coombs' test (or also called antiglobulin test.) The direct Coombs test demonstrates the presence of "incomplete" antibodies; that is, those which are attached at some points on the surface of the red blood cells and require a completing substance, such as antihuman globulin, to cause an agglutination reaction to take place. The direct Coombs' test is carried out simply by mixing the patient's washed red blood cells with serum from rabbits immunized to human gamma-globulin and examining the mixture for agglutination. A positive reaction has been observed in cases of idiopathic acquired hemolytic anemia, in that type of paroxysmal cold hemoglobinuria which is associated with syphilis, and in many instances of "symptomatic" hemolytic anemia. The test is negative in most cases of hereditary spherocytosis and is generally negative in sickle-cell anemia and in paroxysmal nocturnal hemoglobinuria, but in hemolytic anemia due to various physical or chemical agents it has sometimes been positive. A positive direct Coombs' test is also observed when isoimmunization to unknown immune bodies has occurred, as in hemolytic disease of the newborn and in sensitization following transfusion. The "indirect" Coombs' test serves to differentiate such antibodies. In the "indirect" test, antihuman globin serum is mixed with normal group O, Rh-positive, and Rh-negative red blood cells which have been incubated in the patient's serum.

The resulting reactions are shown in the table below. If agglutination occurs with both Rh-positive and Rh-negative cells, Rh antibodies can be excluded.

19. *Wasserman* — Some hemolytic anemias cause positive Wasserman.

20. *Sickle-Cell Preparation* — Details are discussed under "Sickle cell anemia."

21. *Hemoglobin Electrophoresis* — Hemoglobinopathies other than Sickle-cell anemia and Thalassemia can be diagnosed only by electrophoretic studies of the hemoglobin. Only by electrophoretic studies of the hemoglobin can we find if a hemolytic anemia is due to an abnormal hemoglobin in the red blood cells. (Hemoglobin C, D, E, G, H, I, J and K.)

Two techniques are used for the routine Hb. analysis, alkali denaturation and paper electrophocesis. It is to be noted that these tests are not always conclusive and that occasionally other techniques are necessary for final diagnosis of the patient's Hb. type. The two techniques mentioned above are simple and inexpensive and may be performed in any laboratory. Remember that blood for the above two methods should be obtained prior to any transfusion; otherwise they are of little value. If the alkali denaturation and/or paper electrophocesis do not give information about the exact time of the patient's Hb., other methods may be used, but they are done in special laboratories because they are difficult. These other tests are starch block electrophoresis, tiselius metal, and others.

21. *Coagulation time, clot retraction, prothrombine time, bleeding time, prothrombin consumption test, and test for fibrinogen deficiency.* In which diseases each of the above tests is abnormal is listed in Table IX and Table X.

TABLE IX

CAUSES FOR ALTERATION IN THE VARIOUS TESTS OF COAGULATION

I. Positive tourniquet test

A. Thrombocytopenic purpura — platelets too few to support capillaries under pressure
B. Nonthrombocytopenic purpuras — damage of capillary endothelium
C. Scurvy — deficiency of intercellular cement substance
D. Scarlet Fever
E. Uremia

II. Prolonged Bleeding Time

A. Thrombocytopenic purpura

B. von Willebrand's disease -- abnormality of capillaries
C. Any of the causes under III and V — due to extreme poverty of coagulation factor

III. Prolonged Coagulation Time

A. Deficiency of AHG
B. Deficiency of PTC
C. Deficiency of PTA
D. Deficiency of Hageman factor
E. Deficiency of fibrinogen
F. Deficiency of prothrombin and/or proacelerin and proconvertin if deficiency is severe.
G. Idiopathic — unknown anticoagulants

IV. Poor Clot Retraction

A. Thrombocytopenia from any cause
B. Thrombasthenia — platelets numerically adequate but functionally inadequate.

V. Prolonged Prothrombin Time

A. Deficiency of prothrombin
B. Deficiency of proacebrin
C. Deficiency of proconvertin
D. Combination of A, B, and C.

VI. Reduced prothrombin consumption

A. Deficiency of AHG
B. Deficiency of PTC
C. Deficiency of PTA
D. Thrombocytopenia
E. Thrombasthenia
F. Circulating antithromboplastin

The above may be expressed in a different way of classification:

TABLE X

CLASSIFICATION OF THE HEMORRHAGIC DISEASES

1. Vascular abnormality:
   a. abnormal bleeding time
   b. abnormal capillary fragility
   c. all other tests normal
2. Platelet defects (quantitative or qualitative)
   a. Abnormal tests as noted in 1 above and 3 below
3. Deficiency of one of the elements of the Thromboplastin group

3a. Presence of a heparin-like agent
   a. Coagulation time abnormal
   b. Prothrombin time normal
   c. Prothrombin consumption test abnormal
4. Deficiency of one of the elements of the prothrombin group

4a. Presence of antiprothrombin or dicumerol-like agent
   a. Prothrombin time abnormal
5. Deficiency of fibrinogen

5a. Presence of a fibrinolytic agent
   a. Poor clot, no clot, or clot is lysed.

23. *Serum iron content.* Is reduced below normal in cases of iron deficiency; may be reduced in association with the anemia of chronic infection, and in various types of anemia in which blood regeneration is active. The determination of serum iron and iron-binding capacity is frequently helpful in differentiating iron deficiency anemia from one of the inherited hypochromic disorders. These tests are quite difficult and can only be performed by competent technicians. A frequent error is the performance of the serum iron level only, without the iron-binding capacity, the latter being technically the more difficult determination of the two. The serum iron level shows marked normal variations, and it is of extreme importance to know the percent saturation of the iron-binding globulin if these tests are to be used for evaluation of a patient's status. Serum iron content is increased in P.A. in relapse and in hemolytic anemias. However, the increased plasma iron of P.A. in relapse falls to values below normal during the time when blood regeneration is occurring as the result of specific therapy.

24. *Iron binding capacity of the plasma.* An interesting difference between the findings in cases of iron deficiency and in those caused by infection is that the iron binding capacity of the plasma is greatly increased above the normal when the hypoferremia is due to iron deficiency, whereas it is less than normal when the hypoferremia is associated with the anemia of chronic infection.

25. B.M.R., P.B.I. and blood cholesterol

for determination of thyroid function, because myxedema may cause anemia. This is usually normocytic, but can be macrocytic.

26. Total serum protein, albumin and globulin, or preferably protein electrophoretic studies.

27. Liver tests (BSP, etc.) because liver diseases may cause anemia.

28. Occult blood in stools. Prior to sending stools for occult blood, the following precautions should be taken:

a. Meat-free diet
b. No green vegetables are to be included in the diet. (They contain enough iron to cause positive occult blood)
3. No iron preparations
d. No aspirin or drugs containing aspirin, because larger doses of aspirin cause enough irritation and bleeding from the gastro-intestinal tract to produce positive test for occult blood.
e. No brushing of the teeth, because this may cause enough bleeding to produce positive occult blood reaction.

The specimen should be taken from the middle of the stool. The reaction should be positive or negative for three tests befor being accepted as valid.

29. Gastro-intestinal tract X-ray studies, to rule out lesions that may be causing anemia.

30. X-ray of the chest may reveal unsuspected metastatic mediastinal enlargement.

31. Rectal examination and sigmoidoscopy cannot be neglected for they may yield the first indication as to the nature and cause of the anemia.

32. Pelvic examination may yield the first indication as to the nature and cause of the anemia.

33. Intravenous pyelogram — The kidneys must be given attention, for it is not unusual for hypernephroma to cause an obscure anemia.

34. Test for achlorhydria of the stomach. (Do this with Histalog, which is a better preparation than Histamin.) If you do not wish to subject the patient to insertion of stomach tube, do tubeless gastric analysis with dye "Diagnex."

35. Roentgenograms of the bones may lead to the discovery of tumors or of periosteal elevations suggesting leukemia.

36. Evaluate adrenal function, because adrenal disease or hypofunction may cause anemia. The simplest method is: Collect a 24 hour urine specimen for 17-ketosteroids (normal value for male 10-15 mg./24 hours, female 7--10 mg./24 hours) and for 17-hydroxycorticoids (normal values for male 4-8 mg./24 hours, female 3-6 mg./24 hours.) In Addison's disease, the anemia is normocytic.

37. Evaluate pituitary gland function if disease of the pituitary gland is suspected, because such disease can cause anemia. In pituitary insufficiency, the anemia is normocytic.

38. Bone marrow biopsy. In bone marrow examination, ask the laboratory for the following:

a. Is M:E ratio (myeloid:erythroid) increased?
2. Is there normoblastic hyperplasia?
c. Is there an increase of nonmyeloid cells?
d. Is there megaloblastic hyperplasia?

After obtaining an answer to the above questions from the pathologist, consult Table below, in which is given the bone marrow appearance in the various anemias:

a. *M:E raio increased:* 1. Myeloid forms of leukemia, 2. The majority of infections, 3. Leukemoid reaction, 4. Decrease in nucleated R.B.C.
b. *Normoblastic hyperplasia:* 1. Hemorrhagic anemias, 2. Iron-deficiency anemia, 3. Hemolytic anemia, 4. Thalassemia, 5. Cirrhosis of liver, 6. Polycythemia vera, 7. Plumbism, 8. Anemia of chronic renal disease.
c. *Nonmyeloid cells increased:* Other forms than myeloid leukemia, 2. Multiple myeloma, 3. Metastases from Ca., 4. Gaucher's disease, Niemann-Pick disease, aplastic anemia (usually relative increase only), infectious mononucleosis.
d. *Megaloblastic hyperplasia:* 1. P.A., 2. Malabsorption syndromes, 3. Macrocytic anemia with Diphyllobothrium in-

festation, 4. Megaloblastic anemia of infancy, 5. Megaloblastic anemia of pregnancy, 6. "Refractory" megaloblastic anemia.

39. *Siderocyte Stain of Blood Smear.* Siderocytes are red blood cells which contain granules containing iron, which appear as basophilic granules, when blood smears are stained with Wright's Stain. Siderocytes appear in the blood following splenectomy and may be seen in the blood of patients with unusual types of anemia.

Siderotic granules are normally present in the normoblasts of the bone marrow. The granules are not found in the normoblasts of patients deficient in iron.

40. *Stain of Blood Smear for Heinz Body.* Heinz bodies are irregular bodies, which are frequently observed in patients with hemolytic anemia, particularly in those caused by ingestion of toxic agents.

41. *Test for "L.E." Phenomenon.* This test is positive in disseminated lupus erythematosis. The test may be falsely negative when severe leukepenia is present. A negative test does not rule out the diagnosis of disseminated L.E. since in some patients with disseminated L.E. the test is negative. A unequivocably positive test is diagnostic of the disease. False positive rarely, if ever, occurs. (We said that L.E. can cause anemia.)

42. *Capillary Fragility Test.* This test is a crude measure of the capillary fragility. There is a fair degree of correlation between the number and size of the petechiae that appear during the performing of the test and the degree of thrombocytopenia. However, the test also depends on the fragility of the capillaries and may be markedly positive when the platelet count is normal. The test should not be repeated on the same arm until one week later.

I. Anemias due to increased loss of red blood cells

A. *Anemia due to acute loss of blood*

The immediate effects of hemorrhage depend upon the rapidity and amount of blood loss. Sudden loss of one-third of the blood volume may prove fatal, but as much as two-thirds may be lost over a 24-hour period without fatal outcome. The rapid loss of blood leads to reduction of blood volume, and the clinical manifestations are due mainly to low blood volume. If the blood loss is great, shock develops. If the patient survives the hemorrhage, the build up of the plasma volume leads to hemodilution that reaches full extent within 72 hours.

Laboratory Findings in "A":

1. Immediately after a hemorrhage, red blood cell counts, hematocrit and hemoglobin are normal, and no morphologic changes in the cells are found, since red blood cells and plasma are lost at the same time: the red blood count, hematocrit and hemoglobin are deceptively high. Within a few hours, fluid enters the circulation from the tissues resulting in hemodilution and a drop in the dead blood cell count and the hemoglobin proportional to the severity of the bleeding.

2. The resulting anemia is normocytic and normochromic, however, several days later, when the bone marrow commences to produce rapidly a large number of red blood cells to replace the lost, immature red blood cells are liberated from the bone marrow, and because these immature red blood cells are larger than the normal mature red blood cells, the anemia may become macrocytic normochromic. However, when the drain of the iron is greater than can be readily replenished, the anemia may become hypochromic.

3. Leukocyotses may take place within the first few hours following severe hemorrhage with "shift to the left." This is the first discernible blood change following acute hemorrhage.

4. The number of platelets increase.

5. Reticulocytosis appears several days after the hemorrhage. A persisting reticulocytosis forming a plateau-like curve, suggets that bleeding is continuing, for cessaation of hemorrhage is marked by quick regession of the signs of stimulated hematopoiesis.

6. When the acute hemorrhage is internal, destruction of the blood and absorp-

tion of the products may lead to an increased excretion of urobilinogen in the urine and stools, and, rarely, even slight bilirubinemia may be found.

B. *Anemia due to chronic blood bloss*

In male the most common cause of chronic blood olss is bleeding (gross or occult) from the gastro-intestinal tract. In female the most common cause of chronic blood loss is excessive menses, this usually not being recognized by the patient nor the physician. The chronic blood loss drains the iron reserve and the critical factor here is iron depletion. The anemia is, therefore, strictly an iron deficiency anemia. When blood is lost in small amounts over a period of time, it appears that the bone marrow is not stimulated to replace the cells as it would be if the blood loss were more acute or of larger quantity. So the peripheral blood pattern of chronic blood loss combines the features of iron deficiency anemia with the signs of bone marrow suppression, or at least subnormal hematopoietic function. When massive hemorrhage complicates the course of chronic blood loss, the picture becomes one of iron deficiency plus active red cell formation. The laboratory pattern described below is the more common one of iron deficiency without release of new blood cells into the blood.

Laboratory Findings in "B":

1. The anemia is microcytic hypochromic.
2. *Blood smear.* The red cells are small and poorly filled with hemoglobin. Poikilocytosis is common. No polychromosia. No reticulocytosis. No nucleated red blood cells.
3. As a rule there is leukopenia with relative lymphocytosis.
4. The icterus index, serum bilirubin, fecal urobilinogen and urine urobilinogen are normal.

II. Hemolytic Anemia:

The symptoms in a hemolytic anemia depend upon the rapidity of hemolysis and its duration. Symptoms may be entirely absent or there may be a few manifestations The patient may complain of symptoms of anemia in general (see "Clinical features of anemia" in the November 1958 issue of this Journal). The patient may present, or may have had in the past, symptoms of hemolytic crisis. In chronic hemolytic anemia, splenomegaly is common and enlargement of the liver may be present. All grades, from acute fulminating disorders of several days' duration to entirely benign conditons of many years' standing, may be encountered. A chronic process may be interrupated by acute exacerbations. Jaundice is a sign common to all hemolytic anemias, but its degree may be such as to be barely perceptible, or so great as to be very striking.

In any patient with anemia, in order to determine the possibilty that the anemia might be hemolytic, order the following:

Icterus index (7)
Fecal urobilinogen (8)
Urine orobilinogen (9)
Total serum bilirubin (10)

In hemolytc anema, the values of (7), (8), (9), and (10) are increased, and this is evidence of increased erythrocyte destruction. In the same time the bone marrow will be producing r.b.c. with a rapid rate (increased rate of erythrocyte production) in an attempt to correct the anemia. In Table XI below, the diagnostic features of hemolytic anemia are given.

TABLE XI

DIAGNOSTIC FEATURES OF HEMOLYTIC ANEMIA

A. Evidence of increase rate of r.b.c. destruction:

1. Anemia
2. Hyperbilirubinemia (increased indirect bilirubin)
3. Increase in stool urobilinogen
4. Increase in urine urobilinogen

B. Evidence of increased rate of erythrocyte production:

1. Reticulocytosis
2. Polychromatophilia
3. Anisocytosis
4. Poikilocytosis

5. Nucleated red blood cells
6. Basophilic Stippling
7. Thrombocytosis
8. Leukocytosis (neutrophilia)

It must be kept in mind that a "compensated" hemolytic disorder (diseases) may be present. In this event the patient will not be anemic but there will be evidence of an increased rate of r.b.c. production and destruction. On the other hand, in many patients the survival time of the r.b.c.'s may be shortened only moderately and the bone marrow may be unable to produce cells at a sufficient rate to compensate for the mild anemia. In such patients there may be a mild anemia but the evidence of increased production and destruction will be minimal or absent. In these cases it may be necessary to measure the lifespan of the r.b.c. and to measure the rate of erythrocyte production.

Once it has been decided that one is dealing with a hemolytic disorder, then the various types of hemolytic disorders must be differentiated. The hemolytic disorders comprise a large group of conditions which vary as to their cause, pathogenesis, severity, duration, and treatment. The classification (that is the possible hemolytic disorders) were given in Table I.

The Following Tests are Used (Useful) in the Differentiation Between the Different Hemolytic Anemias:

See Table IV:

Tests Nos. 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 25, 26, 27, 30, 33, 35, 36, 37, 38, 39, 40, 41, and 42

Van den Bergh (10) is of the indirect type, however, there may be also some increase of the direct Van den Bergh. Coombs' test (18) is positive in some hemolytic anemias.

When the degree of blood destruction is great, there is hemoglobinemia and hemoglobinuria and the urine is red. However, the finding of red urine must not be assumed to be necessarily indicative of hemoglobinuria, because red urine may also be produced by intact red cells, porphyrin, or myoglobin. Microscopic and spectroscopic examination of the urine will reveal the cause of the abnormal color. More often, blood destruction is less rapid and hemoglobinemia and hemoglobinuria are not found.

The fecal urobilinogen may be increased when the urine urobilinogen and the bilirubin in the blood are not significantly greater than normal. The determination of fecal urobilinogen can be accepted as satisfactory for the purpose of diagnosis unliss antibiotics affecting the bacterial flora of the intestine have been withheld for at least 20 days prior to the start of collection of feces.

The anemia may be mild or severe. It is usually normocytic, but may be macrocytic, especially during the stage of rapid regeneration when many relatively immature and reticulated cells are present. Values for hemoglobin and red blood cell counts are depressed to an equal degree; as a general rule, because the iron liberated in the hemolysis of the red blood cells is used all over again, an iron deficiency type of anemia does not develop.

In the stained blood smear the red blood cells may be normocytic or macrocytic, but except in Thalassemia, they are seldom hypochronic; polychromatophilia and reticulocytosis are usually present in the blood smear, and nucleated red blood cells are not unusual.

Howell-Jolly bodies may be present; there may be marked anisocytosis, but there is usually slight poikilocytosis, except in patients with sickle-cell anemia and in severe hemolytic syndromes where there may be much poikilocytosis. Spherocytes may be numerous: spherocytosis is most common in hereditary spherocytosis, but cannot be relied on to differentiate between congenital and acquired types.

The macroytosis may be confused with that of P.A., but the reticulocytosis and regenerative polychromasia are not usual in this disease.

The leukocyte counts are usually normal, but may be elevated or may be low. There may be a "shift to the left". Occasionally

Table XII. Routine Lab Findings in Common Hemoglobinopathies and in Thalassemia

Diagnosis	Hemoglobin GMS %	M.C.H.C.	M.C.V.	Reticulocytes	Peripheral Smear	Sickling Test	Fetal Hemoglobin %	Electrophoresis	
								Paper	Starch: % A_2
Sickle Cell Trait	N.	N.	N.	N.	N.	+	<2	A+S	N.
Sickle Cell Anemia	6-8	N.	N.	I.	‡ *	+	1-15	S	Not Detectable
Hemoglobin C Trait	N.	N.	N.	N.	* *	—	<2	A+C	Not Detectable
Hemoglobin C Disease	N. or D.	N.	N.	N. or I.	* * * *	—	1-10	C	None
Hemoglobin C+S Disease	Usually D; occasionally N.	N.	N.	I.	† * *	+	1-5	C+S	None
Thalassemia Minima Including Hypochromic R.B.C.	11-15.5 RBC 4-7 Mill.	N. or D.	N. or D.	N.	* o Rare	—	N. to >2	A	I.
Thalessemia Minor	9-11	D.	D.	Usually N.	* o	—	N. to >2	A	I.
Thalassemia Intermedia	6-9	D.	D.	I.	* * □ o	—	I.	A	I.
Thalassemia Major	3-6	D.	D.	I.	‡ * □ o	—	Usually >5	A (F)	I.
Hemoglobin S—Thalassemia Disease	Usually D; may be N.	Usually D; may be N.	Usually D; may be N.	Usually I.	† * o	+	2-24	S. or S+A (F)	Not Detectable
Hemoglobin C—Thalassemia Disease	Usually D; may be N.	Usually D; may be N.	Usually D; may be N.	Usually I.	* * o •	—	2-15	C. or C+A (F)	Not Detectable

N.=Normal
D.=Decreased
I.=Increased
•=Spherocyte
□=Hypochromic Macrocyte
†=Sickle Cell
*=Target Cell
o=Hypochromia
+=Positive
‡=Nucleated R.B.C.
—=Negative

myelocytes and even rare myecloblasts be present.

The number of the platelets is usually normal but may be elevated or depressed.

The nomenclature of antibodies is rather confusing. Some definitions of antibodies follow:

agglutinins are antibodies which cause agglutination of red blood cells. The antigen of the r.b.c. is called an agglutination.

hemolysins are antibodies which cause hemalysis of red blood cells in the presence of complement.

autoantibodies are antibodies which are capable of acting on the patient's own red blood cells.

isoantibodies are antibodies which are capable of acting on the red blood cells from normal subjects. Isoantibodies may be "nonspecific", i.e., they act on red blood cells independently of their blood group. They may be "specific", i.e., they act only on red blood cells of a certain blood group.

"*complete*" antibodies are antibodies which are capable of causing agglutination or hemolysis in the presence of saline.

"*incomplete*" antibodies can be detected in 4 ways: by the antiglobulin (Coombs') test, by means of trypsinized r.b.c. by titration in an albumin medium rather than a saline media, and by titration in the presence of large antisomatic molecules.

In general, hemolytic anemias are divided into two groups

A. Hemolytic anemias due to intracorpuscular causes and

B. Hemolytic anemias due to extracorpuscular causes.

In the *intracorpuscular hemolytic anemias* the defect resides within the red blood cells. The hemolytic anemias due to an intracorpuscular defect are all inherited disorders. With the possible exception of paroxysmal norturnal hemoglobinuria. Therefore, in this group a careful history of the presence of anemia, jaundice, and splenomegaly in relatives is of great importance. However, either a positive or a negative history may be very misleading and it is by far better to examine all available relatives: do CBC, serum bilirubin, stool and urine urobilinogen.

In general, antibodies are absent from the blood of patients with hereditary hemolytic anemia (intracorpuscular).

The diagnostic tests of value in the differentiation of the intracorpuscular hemolytic anemia are listed in Table XII and Table XIII.

TABLE XIII. SPECIAL DIAGNOSTIC FEATURES OF THE INTRACORPUSCULAR HEMOLYTIC ANEMIAS

Condition	R. B. Cells Morphology	Increased Osmotic Fragility	Acid Serum	Abnormal Hemoglobin Electrophoresis
Hereditary Spherocitosis	Spherocytes[1]	+	O	O
Hereditary Nonspherocytic Anemia	Normocytes	O	O	O
Hereditary Elliptocytosis	Elliptocytes	O	O	O
Paroxysmal Nocturnal Hemoglobinuria	Normocytes	O	+	O
Hereditary Hemoglobinopathies	Variable[2]	O[3]	O	+

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[1] Spherocytes are not pathognomonic of hereditary spherocytosis. They may also be increased in some pts with acquired hemolytic anemia.

[2] See Table.

[3] In the presence of target cells the osmotic fragility will be decreased.

Editorials

IS THERE A NEED?

Andrew M. Gehret, M.D.

I swear by Apollo the physician, by Aesculapius, Hygeia and Panacea, and I take to witness all the gods, all the goddesses, to keep, according to my ability and my judgment, the following Oath:

"To consider dear to me as my parents, him who taught me this art; to live in common with him, and, if necessary, to share my goods with him; to look upon his children as my own brothers, to teach them this art, if they so desire, without fee or written promise; to impart to my sons and the sons of the master who taught me and the disciples who have enrolled themselves and have agreed to the rules of the profession, but to these alone, the precepts and the instruction. . . "

All of us will recognize the above, as the first portion of the Hippocratic Oath, administered to us as fledgling physicians.

Recently a respected senior physician of our state, a member of the Medical Society of Delaware, at a public meeting, requested the founding of a College of Medicine in Delaware. Our state, of course, is on the eastern sea-board with medical centers, New York, Philadelphia and Baltimore, within easy reach. Who would benefit from such an undertaking, and, IS THERE A NEED?

The prime objective of any institution dedicated to the care of the sick, be it hospital, College of Medicine, or any of the ancillary organizations, is the welfare of the patient.

To any member of the teaching staff of a College of Medicine, the greatest stimulus to his constant search for advanced knowledge is the presence, at his feet, of keen young intellects thirsting for instruction.

To other practicing physicians of the community and the state, the mere presence of a fountain-head of knowledge, within easy reach, would act as a goad to greater endeavor with the resultant elevation of the status of care for those who seek help for their infirmities.

Despite the large list of June medical graduates each year, the number of hospital internships available renders it impossible for all of these positions to be filled, and, as a result, medical care, of necessity, must be down-graded. In our own state, very few of our extremely small number of hospitals achieve their quota of Grade-A Medical School graduates to fill house staff positions. As a result, by necessity, rather than by choice, hospital authorities must fall back on the foreign trained to round out their hospital personnel. In addition to a frequent, very serious, handicap of language difficulty, some of the Colleges of Medicine in foreign lands do not approach the stature of those in the United States.

Several near-by medical centers have discontinued the position of intern in their own hospitals. Whether this is altruism or failure to achieve their quota, the writer knoweth not. These same institutions are achieving a continued high level care of all their patients by the use of Junior and

Senior medical students on the wards and in the private rooms. Under close observation and supervision, these students receive earlier and closer contact with the patient, rather than being subjected to the old, dry, stilted and frequently soporific lecture method.

Is there a need for a College of Medicine in the State of Delaware?

Medical schools do not fling open their doors for the prospective students within ten minutes or a month or a year after the germination of the idea. A recent estimation of population trend placed the number of citizens of this state at the figure, 600,000 by the year 1970. That is but ten short years. This figure, 600,000, does not include the immediate and surrounding portion of the Pen-Jer-Del territory.

While the preponderance of physicians in this state is located in the northern part of New Castle County, specifically Wilmington, there is a distinct need for greater care in the burgeoning suburbs. In the southern portions of the state, physicians are few and far between. Laymen are constantly imploring the Medical Council and the State Board of Medical Examiners: "Please send us a doctor." There are just not enough capable physicians available. As a result, the fringe groups are moving in as barnacles on the under-side of the hull of Medicine.

Is there no need for a College of Medicine in the State of Delaware?

Do the physicians of Delaware have a challenging duty, greater than their appointed daily round of patients?

Books

Recent Accessions to the Library of
The Academy of Medicine

Allergy

Jamar, J. M.: International Textbook of Allergy, 1959. Thomas

Anatomy

Miroyiannis, Stanley D.: 501 Questions and Answers in Anatomy, 1959. Vantage Press

Anesthesiology

Lee, J. Alfred: A Synopsis of Anaesthesia, 4th ed., 1959. Williams and Wilks

Bacteriology

Gale, E. F.: Synthesis and Organization in the Bacterial Cell, 1959. John Wiley & Sons

Schaub, Isabelle G.; Foley, M. Kathleen; Scott, Elvyn G.; and Bailey, W. Robert: Diagnostic Bacteriology, 5th ed., 1958. Mosby

Cardiovascular System

Boyles, Paul W.: Antithrombotic Therapy, 1959. Grune and Stratton

Clinical Pathology

Hoeprich, Paul D. and *Ward, John R.*: The Fluids of Parenteral Body Cavities, 1959. Grune and Stratton

Levinson, Samuel A. and *MacFate, Robert P.*: Clinical Laboratory Diagnosis, 5th ed., 1956. Lea and Febiger

Endocrinology

Simpson, S. Leonard: Major Endocrine Disorders, 3rd ed., 1959. Oxford University Press

History of Medicine

Gordon, Benjamin Lee: Medieval and Renaissance Medicine, 1959. Philosophical Library

Rowntree, Leonard G.: Amid Masters of Twentieth Century Medicine, 1958. Charles C. Thomas

Immunology

Burnet, Sir MacFarlane: The Clonal Selection Theory of Acquired Immunity, 1959. Vanderbilt University Press

Miscellaneous

Jordan, Edwin P.: The Physician and Group Practice, 1958. Year Book

Neoplastic Diseases

Bluefarb, Samuel M.: Cutaneus Manifestations of the Malignant Lymphomas, 1959. Thomas

Frantz, Virginia Kneeland: Tumors of the Pancreas, 1959. Armed Forces Institute of Pathology

Nettleship, Anderson: Basic Principles of Cancer Practice, 1952. Williams and Wilks

Steward, Harold L.; Snell, Katherine C.; Dunham, Lucia J. and *Schlyen, Samuel M.*: Transplantable and Transmissible Tumors of Animals, 1959. Armed Forces Institute of Pathology

Neurology

Gibbs, Frederic A. and *Stamps, Frederick W.*: Epilepsy Handbook, 1958. Thomas

In Brief

And Delaware?

New York, Pennsylvania, California, Ohio, Illinois and Texas have contributed 41% of all first year medical students in 1957-58. Of the 84 medical schools in this country, one of the oldest is the University of Pennsylvania School of Medicine (1765); the newest is Albert Einstein College of Medicine which graduated its first class in June, 1959.

Dr. Robert C. Anderson, director of the Southern Regional Education Board, pointed out that of the 16 states of the Southern Regional Education Compact, only one—Delaware—is without a medical school or the prospect of one.

Did You Know?

Russia has a standing order for several — 6 to 8 — copies of all medical books published in the U.S.A.

Medical Author

The manuscript of a new book by Arthur J. Heather, M.D., medical director of the Department of Physical Medicine and Rehabilitation of the Eugene du Pont Memorial Hospital, Wilmington, has been accepted by MacMillan for publication and is now in galley form. Dr. Heather's book is a manual for the care of the severely disabled patient and is pointed at both the nursing and medical professions.

National Foundation Fellowships

Fellowships for the clinical study of arthritis and related diseases are now being made available by the National Foundation, 800 Second Avenue, New York City. Only licensed citizens are eligible. Applications must be received by: Feb. 1, for consideration, May 1, 1960; Aug. 1, for consideration, Nov. 1, 1960; Nov. 1, for consideration, Feb. 1, 1961. Health Scholarships in nursing, occupational therapy, medical social work and medicine are also being offered. Credentials and applications for 1960 must be mailed to the same address by April 1, 1960.

Hospitals Elect New Officers

At St. Francis Hospital, Richard C. Hayden, M.D., president; Joseph F. Hughes, M.D., president-elect; Peter J. Olivere, M.D., secretary and Frank J. Gilday, M.D., treasurer.

At Wilmington General Hospital, Leslie W. Whitney, M.D., president;; Philip D. Gordy, M.D., vice-president; Thomas J. Miller, M.D., secretary and Joseph V. Casella, M.D., treasurer.

Beebe Hospital Expansion Plans

Ground was broken for the new nurses' school and residence addition to Beebe Hospital, Lewes, Delaware, which will be completed by next summer. In addition to financing this, it is expected that the $850,000 campaign will also serve to build a new hospital wing and modernize existing hospital facilities within the next few months.

Item

Dr. S. S. Bjornson, formerly medical examiner for Delaware is now assistant pathologist at the Wilmington General Hospital.

Chest X-ray Milestone

Dr. Lawrence Phillips, diagnostician for Delaware's Anti-Tuberculosis Society and retired medical director of Emily P. Bissell Hospital, has been serving Delawareans by reading chest x-rays since he first offered his services to the Society in 1942. Recently he passed his 500,000th reading and is well on his way into the second half million. Dr. Phillips has had a long career as an anti-TB leader and is the man responsible for chest clinics in this state.

Six New Members

The Medical Society of Delaware and the New Castle County Medical Society announce the following members added to the roster: Robert Marion Marine, M.D., a specialist in radiology; Jefferson Medical College '53; office: Delaware Hospital.

Howard A. Lovett, Jr., M.D., general practice; Temple University '54; office: 904 Wilson Road, Wilmington.

Richard H. Weiss, M.D., anesthesiology; Washington University, St. Louis, Mo., '53; office: Wilmington General Hospital.

Jerome J. Bredall, M.D., industrial medicine; St. Louis School of Medicine, '32; office: Chrysler Corp., Newark, Delaware.

William F. Rath, M.D., ophthalmology; Hahnemann Medical '54; office: Professional Building, Wilmington.

Psychiatric Notes

Dr. Fritz A. Freyhan, clinical director and director of research at Delaware State Hospital, has been made editor-in-chief of "Comprehensive Psychiatry," published by Grune and Stratton, Inc., New York City. Dr. Kurt Anstreicher, acting assistant clinical director of the hospital, will be assistant editor. Dr. Freyhan was recently interviewed by Dave Garroway on the "Today" show during which he took part in a panel discussion on schizophrenia.

Dr. M. A. Tarumianz, Superintendent of the Delaware State Hospital has ended his term as chairman of the Northeast State Government Conference on Mental Health.

A special ten-bed ward for psychotic children has been opened at the Governor Bacon Health Center where the intensive care of a medical staff will lessen their chances of remaining life-long patients.

Dr. Albert L. Ingram, Jr., of Wilmington represented Delaware at the South's first regional conference sponsored by the Southern Regional Education Board's mental health training and research program, in Atlanta. Dr. Ingram spoke in Wilmington recently on the "Family and Delinquency."

Fire Alarm

The National Fire Protection Association charges hospitals with a moral responsibility to meet minimum fire safety hazards in operating rooms. It has been demonstrated that the most commonly used anesthetics are also the most flammable ones.

Noteable

Talleyville, Delaware has 60 members in its Fire Company who have received full Red Cross certification for completing courses in advance first aid. Joseph Glick, M.D., taught the volunteer members first aid for bone, joint and muscle injuries.

DEDICATORY REMARKS

Delivered at the Dedication of the Delaware Academy of Medicine

I feel deeply honored that you have asked me to take part in this dedication of your new Academy of Medicine building — truly a physical and professional monument to the physicians and dentists of Delaware.

Invariably I feel a surge of pride in the magnificent achievements of American medicine whenever I see a building such as this. Not only will it serve as a physical facility, but even more important, I believe, it stands as a tangible representation of a spirit that is responsible for the great progress in the art and science of medicine.

In words of rare insight, the English philosopher Hobbes once observed:

"Felicity consists in *prospering, not* in *having* prospered."

This thought offers a strong impetus for continual striving — and prospering. When we lay down our tools, sit back on the job or throw up our hands in despair or resignation, then our felicity, as well as our progress, comes to a halt.

But such achievements as this fine new building are an encouraging reminder that the physicians and dentists of America are not content to stand still, to rest on their laurels.

No, we are continually working to improve our knowledge, to acquire new ideas to conquer disease and to raise the health of the nation to the highest possible level.

Medicine may never wipe out all disease and suffering. However, we can certainly reduce the potency and curtail the deadliness.

The universality of pain and suffering are sufficient challenges for our unhesitating efforts in the direction of protection. And the sublime joy only a doctor can experience when he relieves misery or restores health to the ailing — this is the highest reward we can ask.

No, I have no fears for the future of medical progress, so long as there are dedicated men and women such as you of the Medical and Dental Societies of Delaware. And so long as medicine continues to forge ahead, with buildings such as this, we can all be proud of our efforts.

In behalf of the American Medical Association, I extend warmest congratulations to the physicians and dentists of Delaware for this splendid achievement.

Your medical society is one of the very oldest in the nation, and you have shown your fellow organizations that the Medical Society of Delaware continues to be among the leaders of American medicine.

Louis M. Orr, M.D.
President, American Medical Association

Wilmington, Delaware
Wednesday Evening, October 14, 1959

Auxiliary Affairs

PRESIDENT'S MESSAGE

Woman's Auxiliary to the New Castle County Medical Society

A SUCCESSFUL AUXILIARY

We can do a marvelous job if we women do nothing more than know each other — have faith in our organization and in each other.

WE CAN ACCOMPLISH THIS IF WE:

Contact anyone of the chairmen below and join in the activities of our Auxiliary by working on any committee.

Never miss a meeting — there are only five in an Auxiliary year.

Bring a member who might not have come — or a potential member.

Patronize the Annual Dance.

Volunteer our services for and attend the Bridge and Fashion Show.

Subscribe to the Bulletin — only $1.00.

Read the A.M.A. News — *Be Informed.*

Our husbands are in need of good public relations . . . let us be their agents.

Mrs. Joseph J. Davolos, President

EXECUTIVE BOARD — 1959-60

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DATES TO REMEMBER

January 26, 1960	Executive Board Meeting, Academy of Medicine	9:30 A.M.
	Regular Meeting	11:30 A.M.
	(Bring green stamps to obtain prizes for Bridge Party)	
February 6, 1960	Dance — Academy of Medicine	6:00 P.M.
March 17, 1960	Bridge and Fashion Show, DuPont Country Club	12:30 P.M.
March 29, 1960	Executive Board Meeting, Academy of Medicine	9:30 A.M.
	Regular Meeting	11:30 A.M.
May 24, 1960	Executive Board Meeting, Academy of Medicine	9:30 A.M.
	Regular Meeting	11:30 A.M.

MAJOR MEDICAL MEETINGS IN DELAWARE

Standing Schedule

Beebe Hospital	General Staff	2nd Friday	Monthly
Delaware Hospital	General Staff	2nd Tuesday	Feb., May, Sept., Dec.
Kent General Hospital	General Staff	3rd Tuesday	Monthly
Memorial Hospital (Wilmington)	General Staff	2nd Tuesday	Jan., March, June, Oct.
Milford Memorial Hospital	General Staff	2nd and last Tuesdays	Monthly
Nanticoke Memorial Hospital	General Staff	1st Thursday	Monthly
St. Francis Hospital	General Staff	4th Tuesday 1st Tuesday	March, May, Oct. December
Wilmington General Hospital	General Staff	4th Tuesday	Jan., April, Sept., Nov.

Kent County Medical Society	Monthly Meeting	3rd Tuesday	September - June
New Castle County Medical Society	Monthly Meeting	3rd Tuesday	September - June
Sussex County Medical Society	Monthly Meeting	2nd Thursday	September - June

Delaware Academy of General Practice	Monthly Meeting	1st Tuesday	September - June
Delaware Pathology Society	Weekly Meeting	Each Friday	

Special Schedule

Delaware Heart Association	Board of Directors Meeting	Dover, Delaware Speaker: Charles K. King, M.D.	January 21, 1960
Delaware Academy of Medicine	Annual Meeting	Wilmington, Delaware	February 3, 1960 4:30 P.M.
Medical Society of Delaware	Annual Meeting	Rehoboth, Delaware	September, 1960

LECTURE COURSE

Subject: Basic Electrocardiography

Schedule: Part I

Time — Every Thursday afternoon 4-5 p.m.
Dates: From October 29, 1959 through February 25, 1960

Place: Memorial Hospital, Wilmington

Schedule: Part II

Time — Same as for Part I
Dates: March 3rd through March 31st, 1960
Arrangements must be made for Part II only.

For full details regarding this series write to the Director of Medical Education, Memorial Hospital, Wilmington

TWO-WAY RADIO CONFERENCES FOR THE COMING MONTH

Sponsorship: *Medical Society of Delaware, Pennsylvania Hospital, Smith Kline & French Laboratories.*

Date	*Topic and Faculty*
Jan. 26 —	"Value of Preventive Measures in Atherosclerosis." Peter T. Kuo, M.D., Assistant Prof. Medicine, University of Penna. School of Medicine.
Feb. 2 —	"Role of Steroids in Rheumatoid Arthritis." Richard T. Smith, M.D., Director, Department of Rheumatology; Physician to Pennsylvania Hospital.
Feb. 9 —	"Laboratory Workup of the Patient with Jaundice." Alexander Rush, M.D.
Feb. 16 —	"Carcinoma of the Cervix." Robert A. Kimbrough, M.D., Director, Division of Obstetrics and Gynecology, Penna. Hospital.

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KANAMYCIN

A CLINICAL STUDY

● Kanamycin is an effective agent in the treatment of infections due to staphylococci and some gram-negative organisms. However, toxicity is frequent enough to limit widespread use of this drug.

W. J. Holloway, M.D.*
R. S. Kahlbaugh, M.D.**
E. G. Scott, M.T.***

Kanamycin, a new antibiotic derived from *Streptomyces kanamyceticus*, was made available commercially in 1958. In July of that year, a symposium held at the New York Academy of Sciences included reports on the chemistry, pharmacology, microbiology, and clinical effects of this new antibiotic. These reports attested to its efficacy in the treatment of infections due to *Staphylococcus aureus*[1,2] and in gram-negative bacillary infections,[3] particularly the coliform group and some strains of the *Proteus* species. Less impressive results were indicated in the treatment of tuberculosis[4] with kanamycin. The oral preparation of this drug was reported[5] to be a satisfactory agent for bowel sterilization. Chemically, kanamycin resembles neomycin,[3] and the antibacterial spectrum and toxicity of these drugs are similar. Like neomycin, kanamycin is bactericidal.

The introduction of kanamycin is timely, because its effective spectrum includes organisms which have become resistant to many of the currently available agents. Kanamycin enjoys an advantage over the other antibiotics recently introduced for the treatment of resistant staphylococcal infections in that it may be administered intramuscularly. Although intramuscular injection is the preferred route, kanamycin has been administered intravenously to a number of patients in this hospital without local or systemic reaction. It has become necessary to alert physicians that the oral preparation of kanamycin should be utilized only for bowel sterilization, since there is minimal absorption of the drug through the gastro-intestinal tract.

The nephrotoxic and ototoxic effects of kanamycin were noted[6,7,8] at the symposium in New York. Subsequent reports[9,10] have stressed the ototoxicity of this drug, and this factor has been a deterrent to its wide-

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*Associate in Medicine, Delaware Hospital.
**Senior Medical Resident, Delaware Hospital.
***Bacteriologist, Delaware Hospital.

spread systemic use. There is disagreement in the literature on the incidence of kanamycin-induced eighth nerve damage. Perhaps this difference depends on the intensity of the search for evidence of ototoxicity. As an example, Herrold and Karabatsos,[11] reporting on the use of kanamycin in urinary tract infections, stated that eighth nerve damage was not a problem, but no indication was given whether ototoxic evaluation was clinical or audiometric. It has been suggested in one paper[12] that, other than in lifesaving situations, kanamycin be relegated to topical use only, as has been neomycin. Nephrotoxicity from kanamycin has not been a problem, but it is evident that eighth nerve damage is more frequent and severe in the presence of impaired renal function.

An appreciation of the potential clinical value and the suspected toxicity of kanamycin prompted the Infectious Disease Group at the Delaware Hospital to undertake a limited evaluation of this new antibiotic. We believe that only through careful clinical experience can one properly appraise and utilize each new antibacterial agent. The following is a report of that experience.

Case Presentations

Thirty-six patients, ranging in age from 2 months to 80 years, were given kanamycin* in doses from 0.25 to 2.0 g. per day. Four of the patients were given kanamycin by the intravenous route; the remainder received the drug intramuscularly. A local burning sensation followed some intramuscular injections, but this did not require cessation of therapy. As mentioned above, there were no adverse reactions to the intravenous route.

Thirty-four of the 36 patients were treated in the Delaware Hospital; two of the patients were treated in the Memorial Hospital. Kanamycin was selected for patients in whom there was clinical or laboratory evidence that the antibiotic might be effective. As in any "new drug" study, several patients who were terminally ill from overwhelming infection not responding to mul-

Table I

Infections of Urinary Tract

Case	Age	Sex	Diagnosis	Organism Source	Total Dosage	Response — Comment
1	48	F	Acute pyelitis	Pseudomonas	7.0 g.	Excellent—Organism sensitive to kanamycin
2	44	F	Recurrent pyelitis	E. coli	6.75 g.	Good—Subsequent relapse
3	17	F	Acute pyelitis	E. coli	13.0 g. 7 days	Good—Pregnant; with bacteremia also
4	28	F	Pyelonephritis	E. coli	9.0 g. 6 days	Good
5	61	M	Renal calculi	Paracolon	11.0 g.	Good—Drug used post-op.—Relapse
6	79	F	Renal calculi	Coliform	8.25 g. 7 days	Good—Hemiplegia, comatose—Reinfected
7	78	M	Obstructive uropathy	Paracolon	6.6 g. 6 days	Good—Diabetes, subsequent prostatectomy
8	70	M	Chronic infection	E. coli	8.25 g. 8 days	Good—Diabetes, indwelling catheter
9	77	M	Chronic infection	E. coli	11.5 g. 6 days	Good—Catheter, 8th nerve damage
10	44	F	Chronic pyelonephritis	E. coli	6.26 g. 7 days	Good—Blind—Now totally deaf
11	73	M	Obstructive uropathy	St. aureus and Paracolon	8.0 g. 6 days	Indeterminate—Urine cleared then relapse
12	67	M	Chronic cystitis	Enterococcus	5.0 g. 5 days	Poor—Catheter—8th nerve damage
13	66	M	Chronic cystitis	Klebsiella-Aerobacter	9.75 g. 7 days	Good—Catheter, staph. boil during treatment

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*The kanamycin used in this study was supplied by Bristol Laboratories as Kantrex.

tiple antibiotics were given this agent as a last resort. All of the 36 patients had pre- and post-treatment hemograms. Urinalyses were done every other day during therapy, and blood urea nitrogen determinations were carried out every third day. Appropriate cultures were obtained, and disc and test tube sensitivity tests were performed on all pathogens recovered. The anti-bacterial level of patient's serum (Schlichter titer) was determined in a majority of the cases. Audiologic consultation and follow-up was obtained in 13 of the 36 cases*. Tables I through IV summarize the results of treatment with kanamycin .

Cases 1 through 13 (reviewed in Table I) were suffering from urinary tract infection. The first four cases comprised acute uncomplicated urinary tract infection; the remaining nine had urinary tract infection complicated by obstruction or catheter. Designation of cases of urinary tract infection as either acute uncomplicated, or chronic with catheter or obstruction, is important in assessing results of therapy. In our experience, the uncomplicated infection can be easily eradicated with a variety of antimicrobial agents, while any treatment of chronic infection is usually unsatisfactory until the obstruction is relieved or the catheter removed.

The four acute infections all showed a good initial response to kanamycin therapy. Case 2 remained clinically well but had a bacteriologic relapse, *E. coli* again being isolated from the urine one week after therapy. A 17-year old pregnant girl (Case 3) with bacteremia complicating pyelonephritis was quite toxic but responded promptly to kanamycin (0.5 g. every 6 hours). This patient was known to have prior eighth nerve damage but showed no audiometric change during or after kanamycin therapy. The *Ps. aeruginosa* isolated from the urine of Case 1 is the most sensitive strain of this species we have encountered, being inhibited in the test tube by 3.1 mcg. per cc. of kanamycin. The clinical response was excellent.

Seven of the 9 obstruction or catheter cases had a good response in that the infecting organism was cleared from the urine; however, 3 cases relapsed, and in 3 others a cure depended on surgical relief of the

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*The authors are indebted to Mr. L. L. Horne and Mr. D. M. Knapp of the Audiology Clinic, Delaware Hospital, for audiometric evaluation.

TABLE II

Postoperative Infections — Peritonitis

Case	Age	Sex	Diagnosis	Organism Source	Total Dosage	Response—Comment
14	67	M	Wound infection exfol. dermatitis	St. aureus—blood and wound	26 g. 20 days	Indeterminate—Pt. expired. Steroid therapy
15	55	M	Gangrene foot	St. aureus—wound	8.0 g. 8 days	Good—Wound not sterile
16	18	M	Cushings Disease with adrenalectomy	St. aureus—wound	13.0 g.	Good—Wound not sterile
17	24	M	Multiple fractures	St. aureus and Proteus—wound	26.0 g. 14 days	Poor—Clinical and bacteriological
18	58	M	Gastrectomy	Klebsiella—Aerobacter—wound	23.0 g. 14 days	Poor—No response to therapy
19	48	F	Neck dissection	St. aureus—wound	9.0 g. 7 days	Good—Afebrile 48 hours
20	82	M	Wound infection, pneumonia	St. aureus—wound	6.0 g. 3 days	Poor—Terminal when treatment started
21	2 mos.	M	Suprahepatic abscess	St. aureus—wound	1.4 g. 7 days	Good—Wound not sterile
22	12	M	Perforated appendix	E. coli—abdominal fluid	4.3 g. 5 days	Good—Clinical organism changed
23	53	F	Carcinomatosis, peritonitis	E. coli—abdominal fluid	10.0 g. 10 days	Indeterminate

obstruction or removal of the catheter. Case 10 became totally deaf following kanamycin therapy and will be discussed in detail below. Catheter cystitis improved in a 66-year old male (Case 13), but during kanamycin therapy he developed a large gluteal abcess from which a kanamycin-sensitive strain of *Staphylococcus aureus* was isolated.

Table II summarizes our experience with kanamycin in the treatment of patients with postoperative wound infections and/or peritonitis. Seven of the 10 patients in this group had infections due to *Staphylococcus aureus*. Four of the 7 were considered to show a good clinical response, although the organism was not eradicated from subsequent wound cultures. Three other patients with staphylococcus infection expired despite kanamycin therapy. It is difficult to evaluate the "effect" of kanamycin in these 3 cases; however, we considered the effect of the drug to be poor in one case and indeterminate in two cases. "Indeterminate" as a category was necessitated by (1) the utilization of a number of therapeutic measures which made it difficult to assess the effect of any one measure and (2) the tendency of administering newly introduced drugs to terminal cases as a "last-chance" measure.

A coliform bacillus was the infecting organism in each of the 3 remaining patients. A 12-year old boy with a perforated appendix (Case 22) experienced a good response. Twenty-three grams of kanamycin in 14 days failed to alter the course of a post-gastrectomy wound infection (Case 18) in a patient who subsequently expired. Case 23 also died of post-operative peritonitis complicating carcinomatosis. Kanamycin had no obvious effect on the course of the infection other than a temporary suppression of a high spiking fever.

The next group of cases (Table III) suffered infections of bone, skin, or the respiratory tract. Case 24 had chronic osteomyelitis due to *Staph aureus* and *Prot. mirabilis*. Kanamycin effected prompt improvement with cessation of drainage. The infecting organism was not obtained from another patient with osteomylitis (Case 25), and the response to kanamycin was indeterminate. A 5-year old girl (Case 26), critically ill with an abcess of the nasal septum, was given 3 g. of kanamycin over a 4-day period. This produced an excellent

TABLE III

Infections of Bone, Skin, Respiratory Tract

Case	Age	Sex	Diagnosis	Organism Source	Total Dosage	Response—Comment
24	40	M	Paraplegia, chronic osteo.	St. aureus and Proteus sp.—hip	20.0 g. 12 days	Good—Afebrile
25	63	F	Osteomyelitis	None	21.0 g. 14 days	Indeterminate—8th nerve damage
26	5	F	Abscess nasal septum	St. aureus—nose	3.0 g. 4 days	Good—Afebrile 24 hours—8th nerve
27	63	F	Cellulitis, leg	St. aureus—drainage	7.0 g. 7 days	Good—Culture not cleared
28	20	M	Hodgkins	St. albus—blood St. aureus—throat	5.25 g. 5 days	Good—Afebrile 24 hours
29	3	M	Bronchitis	St. aureus—nasopharynx	1.0 g. 5 days	Good—Afebrile
30	49	M	Bronchopneumonia, methyl alcohol	None	6.25 g. 4 days	Indeterminate
31	63	M	Lung abscess	Klebsiella—Aerobacter—sputum	15.0 g. 10 days	Indeterminate—8th nerve damage
32	54	M	Pneumonia	Klebsiella—Aerobacter—sputum and blood	15.0 g. 15 days	Good—Treated with streptomycin and tetracycline

response; but, on the fourth day of therapy, audiometric evaluation revealed kanamycin ototoxicity without conversational loss, although renal function was normal. Two patients with *Klebsiella-Aerobacter* pulmonary infection were treated with kanamycin (Cases 31 and 32). The first had a lung abcess from whose sputum a *Klebsiella* was repeatedly isolated. Kanamycin appeared to be exerting a benficial effect on the infection when audiometric evidence of eighth nerve damage necessitated cessation of therapy. The second case, acutely ill with *Klebsiella* pneumonia and septicemia, showed striking improvement when tetracycline-streptomycin was administered, but the fever persisted. Kanamycin was then substituted for the other antibiotics, with subsidence of fever and continued clinical improvement.

Septicemia complicated severe underlying disease in the 4 patients presented in Table IV. An 80-year old female (Case 33) underwent a cholecystoduodenostomy to by-pass a carcinoma of the head of the pancreas and became acutly ill on the eighth postoperative day with a temperature of 105° and a leukocytosis of 59,000. A gram-negative rod septicemia was suspected, and intravenous kanamycin was instituted immediately. Prompt clinical improvement occurred in spite of the isolation of a kanamycin-resistant pneumococcus type 14 from the blood culture (minimal inhibitory concentration—50 mcg. per cc.). It is significant that serum antibacterial activity during kanamycin therapy was adequate (Schlichter titer 1:4). This patient showed conversational hearing loss following therapy, although renal function was normal. Case 34, a 76-year old man, developed a coliform bacillus septicemia complicated by shock following urethral instrumentation. Intravenous kanamycin (0.5 g. every 8 hours) was instituted immediately, and the patient experienced a prompt response and became afebrile in 24 hours.

A patient with *Pseudomonas* septicemia complicating acute leukemia (Case 35) was treated unsuccessfully with a constant intravenous drip of kanamycin, for a total dose of 12 g. in 8 days. Cognizant of the fact that most strains of pseudomonads are resistant to kanamycin, we based our use of this drug on an excellent inhibition zone about the 30-mcg. kanamycin disc (utilized only because no 10-mcg. discs were available). Subsequent test tube dilution revealed the inhibitory concentration of kanamycin for this strain to be between 25 and 50 mcg. per cc. After 8 days of therapy, kanamycin was discontinued and a combination of streptomycin and tetracycline was given intravenously, with consequent rapid clinical improvement. Case 36, a 6-year old girl with leukemia and *Klebsiella-Aerobacter* septicemia showed no response to continuous intravenous kanamycin. Terminal invasion of the blood stream by strains of *Proteus* and *Pseudomonas* occurred during therapy.

TABLE IV
Infections of Blood Stream

Case	Age	Sex	Diagnosis	Organism Source	Total Dosage	Respose—Comment
33	80	F	Carcinoma pancreas	Pneumococcus Type 14	5.0 g. 4 days	Good—in vitro resistance, 1:4 Schlichter titer, diminution hearing
34	76	M	Prostatic hypertrophy	Klebsiella—Aerobacter	6.0 g. 4 days	Good—shock, I.V. kanamycin, afebrile 24 hours
35	34	F	Leukemia	Pseudomonas	12.0 g. 8 days	Poor—disc sensitivities off I.V. kanamycin, streptomycin, and tetracycline
36	6	F	Leukemia	Klebsiella—Aerobacter	5.5 g. 8 days	Poor—I.V. kanamycin. Superinfection with Proteus-Pseudo

Table V

In Vitro Studies — Test Tube Dilution

Minimal Inhibitory Concentration

(mcg. per cc.)

Organism	Number of Strains Tested	0.05-2.0	2.1-12.5	12.6-25	26-50	100 and over
Prot. mirabilis	18		8	6	3	1
Staph. aureus	15	3	10	2		
Klebsiella-Aerobacter	6	2	3		1	
E. coli	12		6	5	1	
Pseudomonas sp.	7		1	2	1	3
Paracolon sp.	1		1			
Pneumococcus	1				1	

In Vitro Studies

The minimal inhibitory concentration of kanamycin for the 60 strains of bacteria isolated from the patients in this study was determined. The test tube dilution technic was used. Self-explanatory results are presented in Table V. Likewise, a total of 600 strains (including *Staph. aureus*, *E. coli*, *Klebsiella-Aerobacter*, *Proteus sp.*, and *Pseudomonas sp.*) have been tested for kanamycin sensitivity utilizing a 10-mcg. disc. By this method, 100 per cent of the strains of *E. coli* and *Klebsiella-Aerobacter* were susceptible, all but one of 200 strains of *Staph. aureus* were sensitive, while only 27 per cent of the strains of *Pseudomonas* showed a zone of inhibition. Ninety-eight per cent of the *Proteus* species isolated were reported as kanamycin-sensitive; in our experience,[13] however, disc sensitivities are unreliable when testing strains of *Protues sp.* because of their swarming tendency, so that test tube sensitivities should be carried out.

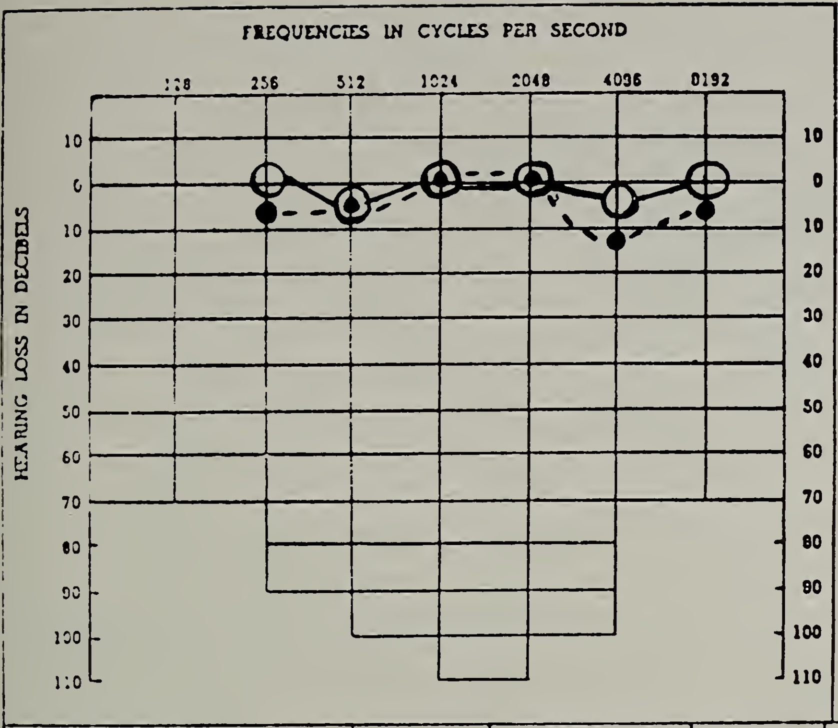
Kanamycin blood levels were not determined; however, in 28 of the patients, antibacterial activity of the serum (Schlichter titer) was determined one hour and four hours following kanamycin injection. The infecting organism from the patient was the test organism used in a two-fold dilution of that patient's serum. An inhibitory dilution of 1:2 or better was considered to represent adequate antibacterial activity.[14] Twenty-three of the 28 patients tested had adequate serum activity one hour following intramuscular injection, and 18 patients had adequate levels at both one-and four-hour intervals. There was excellent corre-

Table VI

Renal and Eighth Nerve Toxicity

	Kanamycin Dosage	
	Over 1.0 g. per day	1.0 g. per day or less
Increased BUN	0	1
Increased urinary albumin	0	0
Increased urinary cellular content	4	0
	TOTAL RENAL DAMAGE 13.8%	
	Audiometer Determinations on 13 of 36 Patients	
Eighth nerve damage	3	2
Clinical deafness	1*	1
	EIGHTH NERVE DAMAGE 46.1%	

*no audiometric determination



Test No.______ Aud.______ By.______

Legend:	Rt. ear	Left ear
Air Conduction:	○—○	●- -●
Bone Conduction:	▷	◁
A.C. not heard	♀	♀
B.C. not heard	▷↓	↓◁
Right ear with left ear masked:	△	
Left ear with right ear masked:		□

Tinnitus:

Right: Freq:______ Cps______ db

Character. ______

Left: Freq:______ Cps______ db

Character: ______

Doerfler-Stewart: ______

Lombard: ______

Stenger: ______

Inferred Threshold:	512	1024	2048
Right ear:			
Left ear:			

Speech-Hearing Thresholds in DB Above Normal:	Free Field	Binaural Phones	Right Ear	Left Ear	Hearing Aid in Ear
Discrimination Loss:	%	%	%	%	%

Figure 1. Audiometric Examination of January 15, 1959.

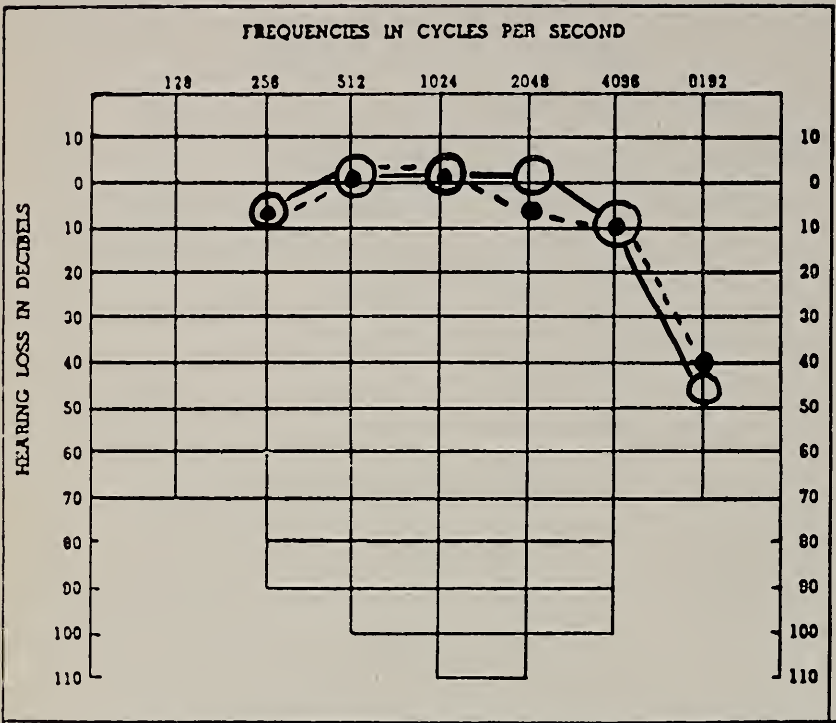
lation between serum antibacterial activity and successful clinical response.

Toxicity

Acute renal insufficiency concomitant with the administration of kanamycin has been reported,[6] but most reviews indicate a minor nephrotoxic role for this drug. Increase in urinary sediment has been the most common evidence of renal irritation.[3] Renal toxicity was uncommon in our experience—only 5 of 36 patients (13.8 per cent) giving clear-cut evidence of this complication. Four of the patients showed an increase in urinary cellular content while receiving more than one gram of kanamycin per day.

Only one patient (Case 10) had an increase in blood urea nitrogen (BUN), and she received less than one gram per day; however, there was slight elevation of BUN prior to therapy, due to longstanding kidney disease associated with hypertension. The BUN on the first day of therapy was 26 mg. per cent, and the audiogram (Fig. 1) was normal. We incorrectly surmised that the uremia was due in part to the chronic *E. coli* pyelonephritis, but on the fourth day of therapy the BUN was 49 mg. per cent, and the audiometric determination (Fig. 2) showed mild depression of high frequencies. On the seventh day of therapy, the BUN had risen to 68 mg. per cent, and the audiogram (Fig. 3) showed further hearing regression at 8000 cycles per second bilaterally. The audiologist concluded that kanamycin was affecting the eighth nerve, and the drug was discontinued. A post-treatment audiogram (Fig. 4) showed progressive damage; and at seven weeks following cessation of therapy, there was no usable hearing for communication — a tragic consequence, since this patient was totally blind. In retrospect, it is obvious that this patient should not have received kanamycin, and no patient should receive the drug until kidney function has been carefully evaluated.

Five of the 13 patients in this study who were subjected to audiometric evaluation showed definite evidence of eighth nerve damage (46.1 per cent). One additional



Test No.______ Aud.______ By______

Legend:	Rt. ear	Left ear
Air Conduction:	○—○	●- -●
Bone Conduction:	▷	◁
A.C. not heard:	○↓	●↓
B.C. not heard:	▷↓	◁↓
Right ear with left ear masked:		△
Left ear with right ear masked:		□

Tinnitus:

Right: Freq:______ Cps______ db

Character: ______

Left: Freq:______ Cps______ db

Character: ______

Doerfler-Stewart: ______

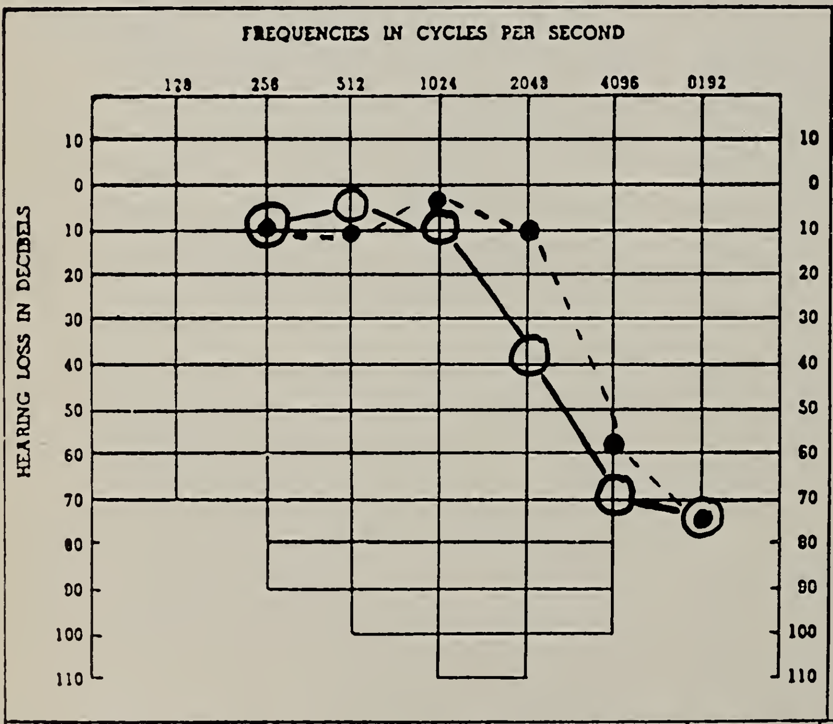
Lombard: ______

Stenger: ______

Inferred Threshold:	512	1024	2048
Right ear:			
Left ear:			

Speech-Hearing Thresholds in DB Above Normal:	Free Field	Binaural Phones	Right Ear	Left Ear	Hearing Aid in Ear
Discrimination Loss:	%	%	%	%	%

Figure 2. Audiometric Examination of January 22, 1959.



Test No.______ Aud.______ By______

Legend:	Rt. ear	Left ear
Air Conduction:	○—○	●- -●
Bone Conduction:	▷	◁
A.C. not heard:	○↓	●↓
B.C. not heard:	▷↓	◁↓
Right ear with left ear masked:		△
Left ear with right ear masked:		□

Tinnitus:

Right: Freq:______ Cps______ db

Character: ______

Left: Freq:______ Cps______ db

Character: ______

Doerfler-Stewart: ______

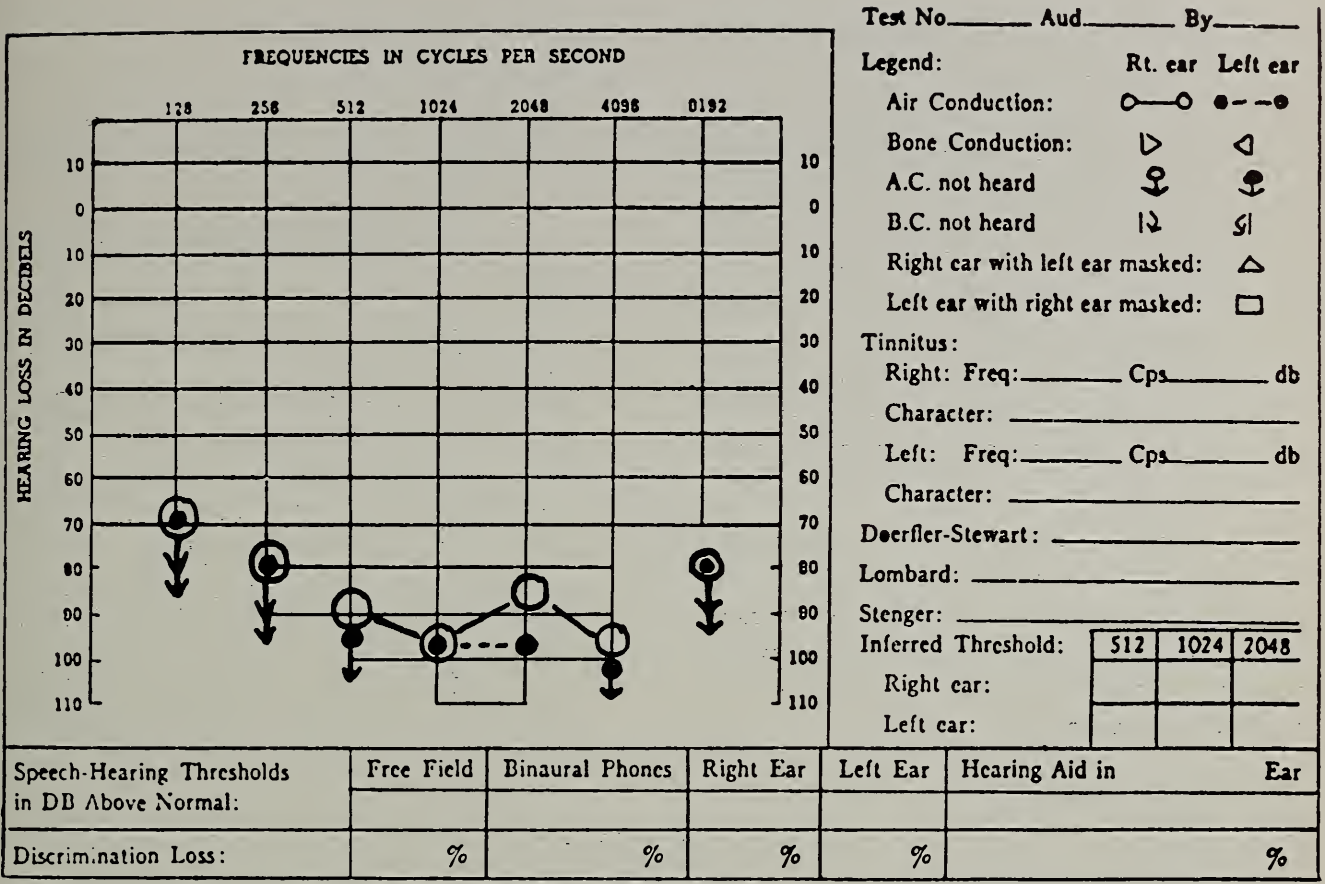
Lombard: ______

Stenger: ______

Inferred Threshold:	512	1024	2048
Right ear:			
Left ear:			

Speech-Hearing Thresholds in DB Above Normal:	Free Field	Binaural Phones	Right Ear	Left Ear	Hearing Aid in Ear
Discrimination Loss:	%	%	%	%	%

Figure 3. Audiometric Examination of January 26, 1959.



Test No_____ Aud_____ By_____

Legend: Rt. ear Left ear
Air Conduction: O—O ●- -●
Bone Conduction: ▷ ◁
A.C. not heard
B.C. not heard
Right ear with left ear masked: △
Left ear with right ear masked: ☐

Tinnitus:
Right: Freq:_____ Cps_____ db
Character: _____
Left: Freq:_____ Cps_____ db
Character: _____

Doerfler-Stewart: _____
Lombard: _____
Stenger: _____

Inferred Threshold:	512	1024	2048
Right ear:			
Left ear:			

Speech-Hearing Thresholds in DB Above Normal:	Free Field	Binaural Phones	Right Ear	Left Ear	Hearing Aid in Ear
Discrimination Loss:	%	%	%	%	%

Figure 4. Audiometric Examination of March 10, 1959

patient developed obvious conversational deafness, although audiometric evaluation was not done. Except for the single case described above, renal impairment did not accompany eighth nerve damage in this study. Patients evaluated audiometrically were not selected but were dependent on the availability of the audiologist and the patients' own ability to cooperate.

RESULTS

Table VII summarizes the results of therapy in the 36 patients treated with kanamycin. Two-thirds of these patients showed a favorable response.

Properly selected patients may be expected to benefit from therapy with this drug. If an antibiotic with the degree of toxicity manifested by kanamycin is to be used extensively, however, there must be clear-cut evidence that this agent is superior to one of already proven effectiveness against a specific infection. The reports

TABLE VII

36 Patients — Results of Therapy

Type of Infection	Good	Poor	Indeterminate
Acute urinary tract	4	0	0
Chronic urinary tract	7	1	1
Postoperative wound	4	3	1
Peritonitis	1	0	1
Osteomyelitis	1	0	1
Cellulitis	3	0	0
Respiratory tract	2	0	2
Blood stream	2	2	0
Total	24	6	6
	66.6%	33.3%	

in the literature and the experience in our study would lead one to the conclusion that kanamycin is frequently not the drug of choice. On occasion, we have seen patients presenting evidence of scepticemia of unknown etiology (probably due to a staphylococcus or coliform bacillus) in which we have used kanamycin initially with some assurance of clinical effectiveness against either organism. When subsequent bacteriological identification and susceptibility studies have been completed, we have then substituted other more appropriate antibiotics.

If no further evidence of the superiority of kanamycin is forthcoming, the systemic use of this drug should he relegated to carefully selected hospital patients in whom constant surveillance for evidence of ototoxicity can thereby be obtained.

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EVALUATION OF STAPES MOBILIZATION FOR OTOSCLEROSIS

● Stapes Mobilization, an operation discovered accidentally in 1952, has become a major factor in the alleviation of deafness due to otosclerosis. The author discusses the indications, contraindications and results of this proceeding and compares it with the fenestration operation.

Howard D. Cohen, M.D.*

Otosclerosis is the primary focal disease of the labyrinthine capsule that may in some cases invade the oval window causing fixation of the stapes, in other cases cause cochlear degeneration, or a combination of both. Improvement in hearing by surgery is possible in hearing loss due to otosclerotic stapes fixation, but not in hearing loss of cochlear origin. The selection of cases for surgery requires an accurate assessment of the conductive and perceptive components of the hearing loss in each patient with otosclerosis.[18]

Stapedial fixation was known in 1704, and it was shown in 1850[19] that, as a result of over one thousand postmortem examinations, stapedial footplate fixation was the cause of much deafness. Direct mobilization of the stapes was attempted in the period from 1876 to 1900, at which time the procedure was abandoned, and attempts were directed toward creating a new path way for sound to enter the inner ear, which led to the fenestra nov-ovalis operation of Lempert[11] in 1938 (fenestration of the horizontal semicircular canal). In 1952, Rosen- performed a middle ear exploration in order to do a preliminary determination of the fixation of the stapes in a patient who was a candidate for the fenestration operation and he accidentally mobilized the stapes with restoration of hearing. He promptly informed otologists of his findings,[12] and as of May, 1958, over 25,000 stapes mobilizations or derivatives of the procedure had been performed in the U.S.

The history of a typical patient is one of progressive deafness with onset in the young or middle adult years in which the patient displays paracusis willisiana (the ability to hear better in a noisy environment), has a low volume or confidential voice, usually (about 50%) has a family history of a similar type of hearing loss, occasionally has increased hearing loss associated with pregnancy, has deprecusis[14] (inability to hear while chewing) and may have tinnitis and less frequently, vertigo of varying prominence in the history of the disease. A history of otalgia and or otorrhea indicates other ear disease, but in no way rules out otosclerosis with intercurrent infection. On examination, the tympanic membrane usually appears normal, but it may exhibit Schwartze's sign, a pink coloration. The Weber test will usually lateralize to the ear with the poorer hearing in this disease, the Rinne test will be negative, and the Schwabach test will be normal. Audiometry will show a hearing loss by air which is much greater than the loss by bone, which indicates that the nerve conduction or cochlear reserve is good.

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Differential Diagnosis

The differential diagnosis in patients who partially fulfill the above criteria is as follows:

1. A phantom audiogram in a patient with unilateral perceptive deafness. This occurs when audiometric masking is inadequate, and sounds which are presented to the deafened ear are received by the good ear. This will give an air and bone conduction pure tone audiogram characteristic of otosclerosis, and tuning fork tests may well confirm this because the patient with a perceptively deafened ear has often lost the ability to localize sound. However, speech audiometry will not confirm the pure tone findings, and the diagnosis of otosclerosis should be viewed with suspicion. The erroneous diagnosis of otosclerosis is not uncommon.

2. Chronic adhesive otitis media. The history of infection may or may not be present, and the tympanic membrane may appear thickened and dull. The audiometric findings in this and in otosclerosis are similar, and the Gelle test is not capable of differentiating between the two conditions.

3. Disruption of the ossicular chain. This may be of congenital, postoperative, or traumatic origin. The history of the onset of deafness is usually, but not always, indicative of this condition. The audiometric findings are similar to those of otosclerosis, and the condition is amenable to surgical correction, either by performing a myringostapediopexy or by surgical restoration of the continuity of the ossicular chain.

4. Congenital fixation of the footplate. These patients have been deaf since birth, and the diagnosis can be established only by middle ear exploration.

The treatment of otosclerosis is such that hearing can be restored by the use of a hearing aid. Otosclerotic patients with a purely conductive hearing loss can achieve excellent hearing with the use of a hearing aid, but the use of a hearing aid may be compared to the use of a crutch. It will restore the ability to hear, but it will not restore normal hearing. For this reason, many patients with hearing loss have resorted to surgical correction of their conductive deafness, for which there are two operations to restore useful hearing, namely the fenestration operation and the stapes mobilization operation.

Fenestration Operation

The fenestration operation is a brilliantly conceived and executed bypass operation in which the sound conduction transformer action of the tympanic membrane and the ossicular chain are circumvented by the creation of a new pathway for sound pressure to stimulate the perilymphatic fluid, but it is necessary to concommitantly perform a radical mastoidectomy.

The stapes mobilization operation has as its surgical obective the adequate mobilization of the entire middle ear mechanism to transmit again the undistorted auditory vibrations to the perilymph with essentially normal amplitude.[6]

Various treatments which have been attempted to relieve otosclerotic deafness and which have failed include percussion and vibration applied to the short process of the malleus, exposure of the patient to various vapors, pneumomassage to the tympanic membrane applied externally, electromassage, inflation of the Eustachian canal with air, stream or medicinal vapors, injection of fluid through the Eustachian canal, bougiennage of the Eustachian canal, electricity, and x-ray treatments.

A candidate for the stapes mobilization operation is any patient with otosclerosis who has no specific anatomic or pathologic contraindications, and who has a bone conduction not less than 45db, with a significant air-bone gap in the speech frequencies (500, 1000, and 2000 cycles).[6]

Goals of Stapes Mobilization Operation

The functional goals of the stapes mobilization operation are as follows:[13]

1. To obtain normal hearing (0-10db).
2. To restore hearing to an 11 to 20 db level in patients with some evidence of a perceptive loss in whom it is impossible to restore normal hearing.
3. To restore useful binaural hearing.
4. To remove the conductive component of a mixed hearing loss (perceptive and conductive).
5. To permit the successful use of a hearing aid in a patient with extreme deafness of a mixed type where a hearing aid alone cannot produce satisfactory hearing, but on whom the operation would not be expected to produce satisfactory hearing without aid.

The operation may also be considered to eliminate or reduce vertigo and tinnitis in a patient with otosclerosis who might not otherwise be considered a candidate for the operation.[3]

The preoperative audiometric classification of the patient's hearing loss has been established by the Otosclerosis Study Group.

The Class A patient has a hearing loss which is not greater than 10 db at 500, 1000, and 2000 c p s by bone conduction.

The Class B patient has a hearing loss which is not greater than 20 db at 500 and 1000 c p s and not greater than 30 db at 2000 c p s by bone conduction.

The Class C patient is one whose hearing loss does not fall into Class A or Class B.

There is no correlation between the age of the patient, the duration of the disease, or the severity of the hearing loss and the amount of improvement which can be obtained.

The operation is performed under local infiltration analgesia, and sedation is held to a minimum in order that the patient may respond to auditory stimuli so that the progress of mobilization can be determined. Most authorities employ a suspended, binocular, stereoscopic, variable magnification operating microscope with a self-contained source of illumination such as one manufactured by Carl Zeiss. The magnification and illumination provided by this instrument have been described as one of the most significant advances in stapes mobilization surgery.

The patient is placed in the dorsal recumbent position with the affected ear turned up, and after sterile preparation and infiltration analgesia, an incision is made in the posterior cutaneous external canal wall, and this wall is elevated from the osseus canal wall. This skin and the posterior half of the tympanic membrane are reflected forward over the anterior half of the drum exposing the tympanic cavity. It is usually necessary to remove some of the osseus external canal wall with a curette in order to expose the stapes and the oval window. The footplate of the stapes is inspected in order to determine the amount of otosclerotic involvement and the location of the otosclerosis in order to select the procedure which will best afford adequate mobilization.

Three Main Categories of Technique

The techniques employed to mobilize the stapes or achieve sound transmission to the perilymph are divided into three main catagories, namely the indirect methods, the direct methods, and the prosthetic implantations.

The first of the indirect methods to be used was that of Rosen which has been described as the "tilt" technique.[12] A curved mobilizer was placed on the neck of the stapes and an attempt was made to free the stapes with traction in a posterior direction. This method only provided about 35% good results, and about half the cases resulted in fracture of the stapes. The next development was the application of pressure in an inward direction with the pressure being applied either to the incus or to the head of the stapes, and these methods were known as the transincudial or transcapitular methods, but the percentage of good results was not improved materially over those obtained from the "tilt" method.

As the pathology is usually located at the circumference of the footplate, it was logical to transfer the efforts to break up the otosclerosis directly to the pathology, and thus the direct methods were developed. The otosclerotic foci were attacked either with a pointed instrument making multiple perforations, or with microchisels which cut directly through the otosclerosis. One author[4] postulated that in a successful mobilization by the tilt method, what actually occurred was a fracture through the anterior crus above the otosclerosis, and a fracture through the footplate behind the otosclerosis, maintaining continuity of the ossicular chain through the head of the stapes, the posterior crus, and the posterior half of the footplate. He devised an operation to create this condition in which he cut the anterior crus and cut the footplate across the middle, and this procedure was called a monopodal (one foot) lysis. When the otosclerosis was cut so that the entire footplate was freed and sound was transmitted through both crura, this was called a bipodal lysis.

The prosthetic implantations have been mainly polyethylene tubing, and some workers have recommended the use of tantalum wire. In cases where there is too much otosclerotic involvement at the margin of the footplate, or the entire footplate has too much involvement to prevent mobilization, a hole may be either picked or drilled in the footplate exposing the perilymph, and this is covered with a vein graft. A wire or polyethylene prosthesis is then inserted between the incus and the vein graft in order to maintain continuity of the ossicular chain. Results from the vein graft—polyethylene tubing operation have been encouraging.[16]

Most surgeons prefer to work directly at the footplate, and some will not hesitate to remove the crura of the stapes in order to mobilize or fenestrate a footplate which cannot be mobilized with the crura intact.

Complications Which Can Occur

Surgical complications which can impede or prevent the restoration of hearing are splitting or breaking of the long process of the incus, dislocation or avulsion of the incudostapedial joint, breaking or splitting of the head or neck of the stapes, fracture of one or both of the stapedial crura, annular ligament tear, dislocation of the stapes into the vestibule, facial nerve injury, chorda tympani nerve injury, and tympanic membrane perforations.

The stapes mobilization operation is not simple; it is a painstaking surgical procedure not without complications. It has been described[8] as an operation more difficult to perform than the classical fenestration, which is a radical mastoidectomy and fenestration of the horizonal semicircular canal. Among the postoperative complications which can occur are parotitis, otitis externa, tubotympanitis, facial paralysis, either temporary or permanent, loss of residual hearing, persistent tympanic membrane perforation, perverted taste sense, dead labyrinths, and mastoiditis. Two deaths are known of, but not reported, resulting directly from this operation. However, there has been much illogical criticism of the operation, and the complications and risks were emphasized beyond the limits of reasonable consideration.[9]

The Advantages

The advantages of this operation in comparison with the fenestration are as follows:

1. It can restore normal hearing (0-10 db level). This operation can eliminate the audiometric surgical deficit (close the air-bone gap) which the fenestration operation cannot do. There is a residual 15 to 25 db air-bone gap after the fenestration operation because of the elimination of the sound conduction transformer action of the tympanic membrane and the auditory ossicles. The fenestration can restore only usable, but not normal hearing.

2. The surgical morbidity is minimal. A great number of the patients are discharged from the hospital on the day following surgery, and the incidence of postoperative vertigo and nausea is reduced both quantitatively and qualitatively. The fenestration requires seven to ten days hospitalization, and vertigo is often severe for weeks.

3. The postoperative treatment required is usually minimal because the anatomy of the ear has not been altered, and the incision heals primarily. It often takes several months for the radical mastoidectomy cavity of the fenestration to heal, and about 13% of post-fenestration patients have a chronically draining ear. Weekly or semiweekly postoperative visits may be required after the fenestration for one to three months.

4. The ear of the patient is not disfigured by the stapes mobilization operation. There is no indication to the layman that an operation has been performed. Although the cosmetic appearance after the fenestration is quite acceptable, the radical mastoidectomy bowl of the fenestration is difficult if not impossible to fit with a hearing aid mold should the operation be unsuccessful.

5. No long term (life time) postoperative care is required; the fenestration must be seen semiannually or annually in order to maintain toilet of the cavity.

6. The incidence of persistent postoperative vertigo is low—0.3%.[5]

7. The stapes mobilization may be indicated for patients who would not be candidates for the fenestration operation because of either audiometric or medical contraindications.

8. Remobilization may be performed within six months after a previously unsuccessful mobilization attempt.[9]

9. An unsuccessful mobilization attempt does not statistically impair the chances of the patient to have a successful fenestration performed.[2]

10. Binaural hearing can often be reestablished with the stapes mobilization operation. Because of the difficult postoperative course after the fenestration, many patients with successful hearing restoration are reluctant to have a fenestration performed on the contralateral ear, but after the mobilization operation, most patients wish to have binaural hearing restored. The advantages of binaural hearing are[1] the ability to localize the source of a sound, the ability to hear well in a noisy environment, and the lowering of the speech reception threshold.

The Disadvantages

The disadvantages of the stapes mobilization operation are as follows:

1. It is not predictable. This is an early claim against the operation which is no longer true. As more experience has been gained, the percentage of successful operations has been reported to be between 65% and 80%. A recent report by a reliable author stated that 95% good results were obtained with his modification of the operation.[17]

2. The reankylosis rate is significant. This is true, but the rate is low, and if reankylosis occurs, revision of the mobilization or a prosthetic implantation can be performed. It has been suggested that if hearing improvement was maintained for at least one year, the operation should be considered as a worthwhile surgical procedure.[10]

The problem of the criteria for success of the operation is a difficult one, and these criteria vary from author to author. Some recommend the use of the average of the three speech frequencies as measured by pure tone air conduction audiometry, while others recommend the use of the Fletcher equivalent speech reception threshold, which is an average of the best two of the three speech frequencies. This has been claimed to more closely approximate the level of hearing which the patient exhibits, and it may be slightly higher than the average of the three speech frequencies. Another recommendation is to use only the speech reception threshold as tested with the speech audiometer.

Some patients are considered to be improved if their hearing reaches the 35db level, while other groups require that the hearing must reach the 30db level before the patient can be considered improved. This is a satisfactory way to evaluate the Class A and the Class B patients, but not many of the Class C. patients could be regarded as successful under these criteria. A conductive efficiency evaluation[7] was proposed which is the ratio of the postoperative gain divided by the maximum predictable gain, and this is expressed as a percentage. This is a good way to express the success of the operation, but it does not indicate the ability of the patient to hear.

PRESENTATION OF CASES

A series of twenty-four consecutive ears in seventeen patients is presented. All but one of these ears were operated upon by the author, either alone or under supervision. The one exception is an ear operated upon by John J. Shea, Jr., who demonstrated his vein graft and polyethylene prosthetic stapes operation on a patient whose contralateral ear is included in the series. The youngest patient was 31 years old, and the oldest patient was 69 years old. The medium age was 41 years. The sex ratio was 6 males and 11 females, 35% to 65%. There was one remobilization performed in this series, but no ear was operated twice.

Although this series is not large enough to be significant, the statistics obtained show trends that are in agreement with those presented by other authors. The period of follow-up study is too short to be significant. The longest followed patient was 16 months postoperatively. Most patients were followed at least 4 months. Interestingly, several patients who had a good result two weeks postoperatively often had a further marked gain when tested after two months.

TABLE 1

Total number of cases - 24 ears in 17 patients		
No. of "A" cases	5 "	21%
" " "B" "	8 "	33%
" " "C" "	11 "	46%
No. of ears achieving 30 db level or better	16/24	67%
" " "A" " " " " " "	5/5	100%
" " "B" " " " " " "	6/8	75%
" " "C" " " " " " "	5/11	45%
No. of ears achieving 20 db level or better	11/24	46%
" " "A" " " " " " "	5/5	100%
" " "B" " " " " " "	4/8	50%
" " "C" " " " " " "	2/11	18%
No. of ears achieving 10 db level or better	3/24	13%
" " "A" " " " " " "	0	0
" " "B" " " " " " "	2/8	25%
" " "C" " " " " " "	1/11	9%

Thirteen of these ears were operated upon employing the indirect method. They were either operated on at a time before direct methods were being used, or when indirect methods were attempted, and direct methods were employed only if the indirect attempts were unsuccessful. One patient had a footplate fenestration, vein graft, and prosthetic columella inserted between the vein graft and the incus with a good result. Toward the end of the series only direct methods were employed; these patients seemed to show better results, but the series is too small for analysis.

Two patients were admitted with the chief complaint of vertigo. Both patients received good hearing results, and one was completely relieved of his vertigo. His case was described in a separate paper.[3]

RESULTS

Two ears (80%) had a postoperative decrease in air conduction, but none was greater than 8db.

Four ears (17%) had a postoperative decrease in bone conduction, three of which were slightly greater than 10db, but two of the last mentioned three had an excellent increase in air conduction and are among the successful cases.

Ten of the sixteen successfully mobilized cases had an increase in the air conduction level almost to or above the pre-operative bone conduction level. The conductive efficiency evaluation was near or above 100% in these ten cases, and six were well above 100% (132-170%).

SUMMARY

A brief description of otosclerosis and its diagnosis and treatment has been given. The advantages, disadvantages, and the complications of the stapes mobilization operation have been discussed. A series of twenty-four cases was presented.

CONCLUSIONS

The stapes mobilization operation is the surgical approach of choice for patients with clinical otosclerosis. It can restore hearing to a normal level (0-10 db), and it offers the patient the minimum of discomfort and morbidity. Conceivably, surgical skill will arrive at a level at which the only patients who cannot have surgical restoration of hearing by this method and its modifications are those whose fossa ovalis is so contracted that it is impossible to expose the oval window without injury to the facial nerve.

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A.M.A. FIFTY YEAR CLUB

Dr. J. H. McCurry, of Cash, Ark., advises that he has the approval of the American Medical Association to organize a Fifty Year Club within the AMA. Dr. McCurry is anxious to hear from physicians who have been in practice fifty years or more who desire to become members of this club, giving their name and a complete address.

The first meeting is to be held in Washington, D.C. at the Clincial meeting November 29 to December 2, 1960.

● It may seem that advising and performing rhinoplasty is to both the surgeon and the patient somewhat like playing with a loaded gun, but when advised and applied under careful conditions of selection, conception, and execution, rhinoplasty remains today, as in 1898, one of the most gratifying of all cosmetic operations.

FAILURES IN RHINOPLASTY

James T. Metzger, M.D.*

With an increasingly popular acceptance of cosmetic surgery in principle, there has been a natural rise in the number of operations which are designed purely for an improvement in appearance, and which have little or no value in a functional sense. Although in the spectrum of plastic surgical procedures, operations of this type remain small in the total percentage of cases done, they do, nevertheless, play an important role in modern surgery.

Today's surgical literature is filled with descriptions of the technique of scar revision,[11] augmentation and reduction mammaplasty,[7] and face lifts.[16] Hardly a month goes by without discussion of some aspect of rhinoplasty, undoubtedly the most common cosmetic operation of all. Unfortunately this fact has led to frequent and often inaccurate accounts of its technique and merits in the lay press. Formerly an operation for the movie star, rhinoplasty is now available to the housewife as well. At clubs and teas, the results of different rhinoplasties are compared and criticized almost as one might compare and criticize a suit of clothes or a dress.

The scientific literature has been quick to describe the techniques of rhinoplasty—the general public has been quick to criticize and emphasize the faults in it. Neither has been particularly careful to appreciate or understand why the operation is not always completely successful. Of course, there have been, from time to time, good discussions on this point.[5, 12, 14] It still remains advantageous, however, to all who advise, receive, and perform rhinoplasty to see how there can be failures, and how these failures come about.

Basically, rhinoplasty achieves its purpose by remodeling three key areas of the nose: the dorsal line, the nasal base, and the nasal tip. The upper nasal pyramid is bony, and is remodeled both at the dorsum and base by a combination of fracturing, withdrawing and repositioning bone. The lower nasal pyramid is cartilaginous and is adjusted by freeing and trimming the septal and lateral cartilages.

The classic description of cosmetic rhinoplasty was by Jacques Joseph of Berlin in 1898[10] and excellent expositions on his work[9, 1, 3, 15] have continually improved the technique. Under optimum peacetime conditions, 72 hours of hospitalization and a major operating room set-up are required. Approximately 14 days of after care is necessary and, because of post operative blepheral edema and ecchymosis, most

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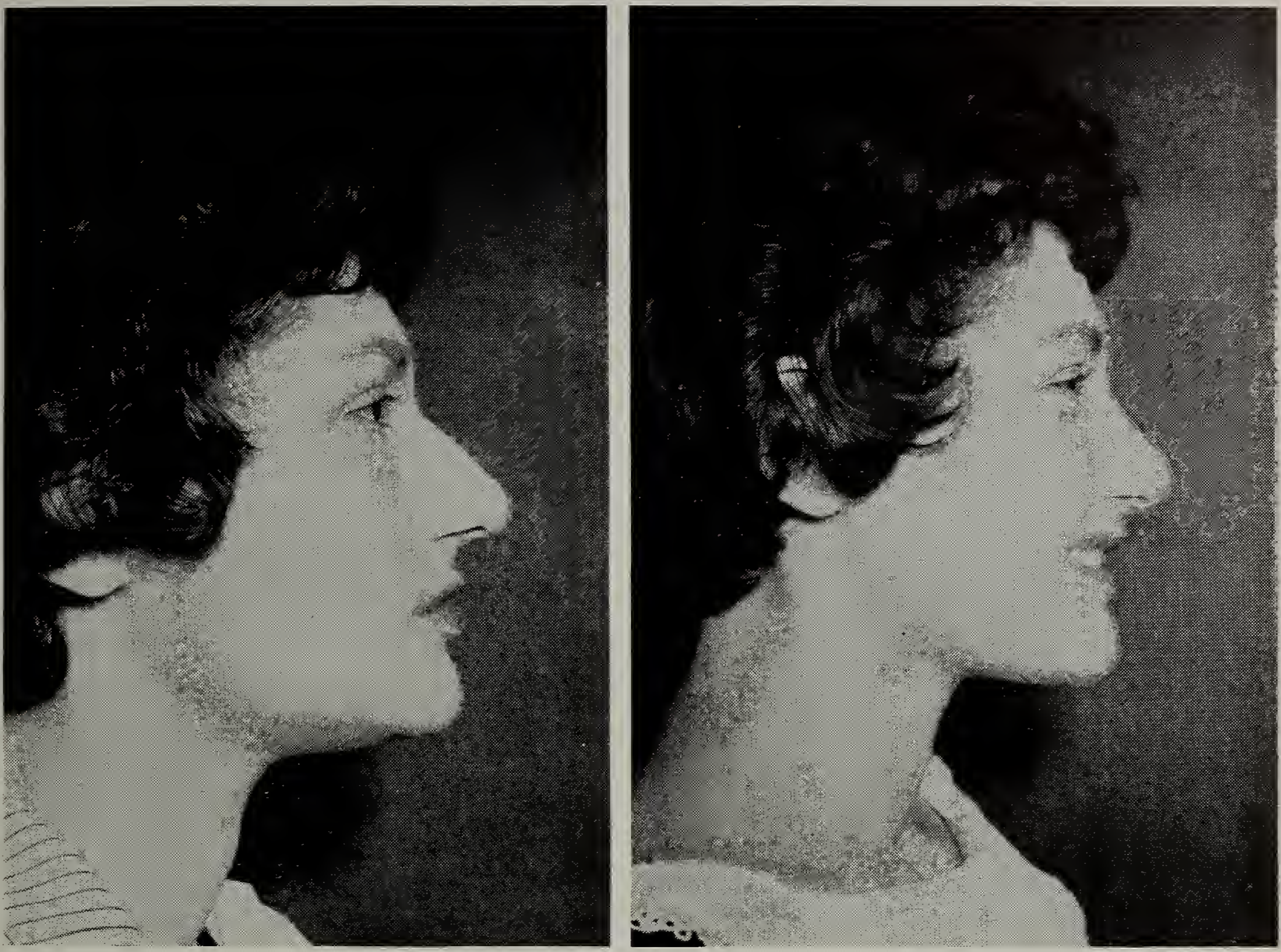

Figure I.

working people allow two full weeks before returning to their usual occupation.

Among plastic surgeons, local anesthesia has found wide acceptance.[13] This allows for normal tone and mobility of the face during the operation, which is a most helpful adjunct to on-the-spot evaluation and adjustment of nasal contours. Heavy preoperative sedation and accurate nerve block anesthesia make the operation painless and the recollection of it foggy.

The procedure is performed entirely from within the nose. Through bilateral internal alar incisions the bony dorsum is undermined. Laterally, this is subperiosteal, while over the hump it is subcutaneous. Bleeding is minimal. Bilateral internal alar incisions are then made and are joined at the apex of the vestibule by a transfixing columellar incision. Through this the nasal tip is undermined subcutaneously, and the undermining is carried upward until the entire cutaneous attachments are thoroughly released. The lower lateral (alar) catilages are dissected free and presented through their respective airways. The upper lateral cartilages are separated from the nasal septum so that the bony and cartilaginous septum stands free. Using either scissors or the No. 11 blade, the cartilaginous hump is cut through, and, using this cut as a guide, the bony hump is removed with the 5 millimeter osteotome. The entire bony and cartilaginous hump is then withdrawn, making the first major change.

A section of the medial portion of the lateral crus of the lower lateral cartilage is removed to narrow the nasal tip, and, if desired, a section adjacent to the upper lateral cartilages is resected to elevate the alar wing. At this stage, a portion of the maxillary nasal spine may be removed to increase the vertical height of the upper lip, and to sharpen the columellar angle.

The upper lateral nasal cartilages are trimmed of their redundancy and, using the guarded osteotome, the maxillary nasal processes are fractured free, flush with the face, thereby mobilizing the bony dorsum, which is set into its new positon. With the application of a dental compound splint, the operation is brought to a close. Rarely is it necessary to suture the original wounds, but, if so, this can be done with fine surgical gut. Position of the splint is maintained for about 48 hours, and subsequent taping is used until edema and ecchymosis have subsided.

There are, of course, individual variations in the technique as described, but these are usually minor. How then, in such a well established, time-tested, carefully described operation, can failures arise?

The answer is both simple and complex. Failures (simply) must sometimes follow when dealing with any situation in which there are many variables. And they arise (complexly) when these variables exist without an awareness of their existence and where they are subject to incomplete control.

In rhinoplasty, failure commonly follows when the patient does not appreciate the technical limitations of the operation. A human nose cannot be modeled as wood or clay. Nor is a surgical operation artistic to the degree that one can erase and change as with paper and canvas. A clear understanding on this point between patient and surgeon is essential. At the time of the first interview, it must be well understood that the surgeon can only alter the objectionable features of the nose, and that the result which follows this alteration will be an improvement on the original. He can never guarantee, either by expression or implication, that the alteration will match any preconception on the part of the patient.

Preoperative casts, drawings, or photographs which may be used to demonstrate what the patient will look like following rhinoplasty, may be seriously misleading. The surgeon can, however, extend reasonable assurance that, with correction of certain succinct disagreeable aspects of the nasal contour, an agreeable change will take place.

If there are limitations in the technique, there are also limitations in the technician —for at the operating table, the surgeon becomes this. The rate of failure in rhinoplasty will obviously relate to the training and experience of the operating surgeon. Over the years, there have been serious and exhaustive efforts to resolve the contours and planes of the face into some type of readily usable mathematical formula.[4] Expositions of the most careful type have studied the nose in relation to the face, as expressed in classic painting.[8] Straith[18] devised an instrument, which he called the "profilometer," as an aid in appreciation of nasal angles in relation to the face. But, aside from an artistic appreciation of what should be altered, the ability to perform these alterations accurately presents a most difficult surgical exercise.

Proper and clean osteotomies of the bony hump and nasal base are often difficult to attain; equal adjustment of the alar cartilages is essential; a smooth blend from the bony to the cartilaginous dorsum requires careful inspection of the junction of the two; and an equal in-fracture of the lateral nasal process must be done. The nasal septum is frequently twisted so that some degree of septum reconstruction, after the technique of Metzenbaum or Steffensen, is usually necessary. Every possible variable in the complex structure must be accurately controlled, making rhinoplasty truly surgery of millimeters. The surgeon also finds himself in the particularly difficult position of projecting, by way of the sensory advice of his fingers (for after separation of the nasal skin, visual appraisal is essentially valueless) what change he has been able to effect and imagine clearly what the ultimate resolution will be. This he must do in spite of vagaries in healing, callus formation, contractures, and even possible traumatic indiscretions by the patient.

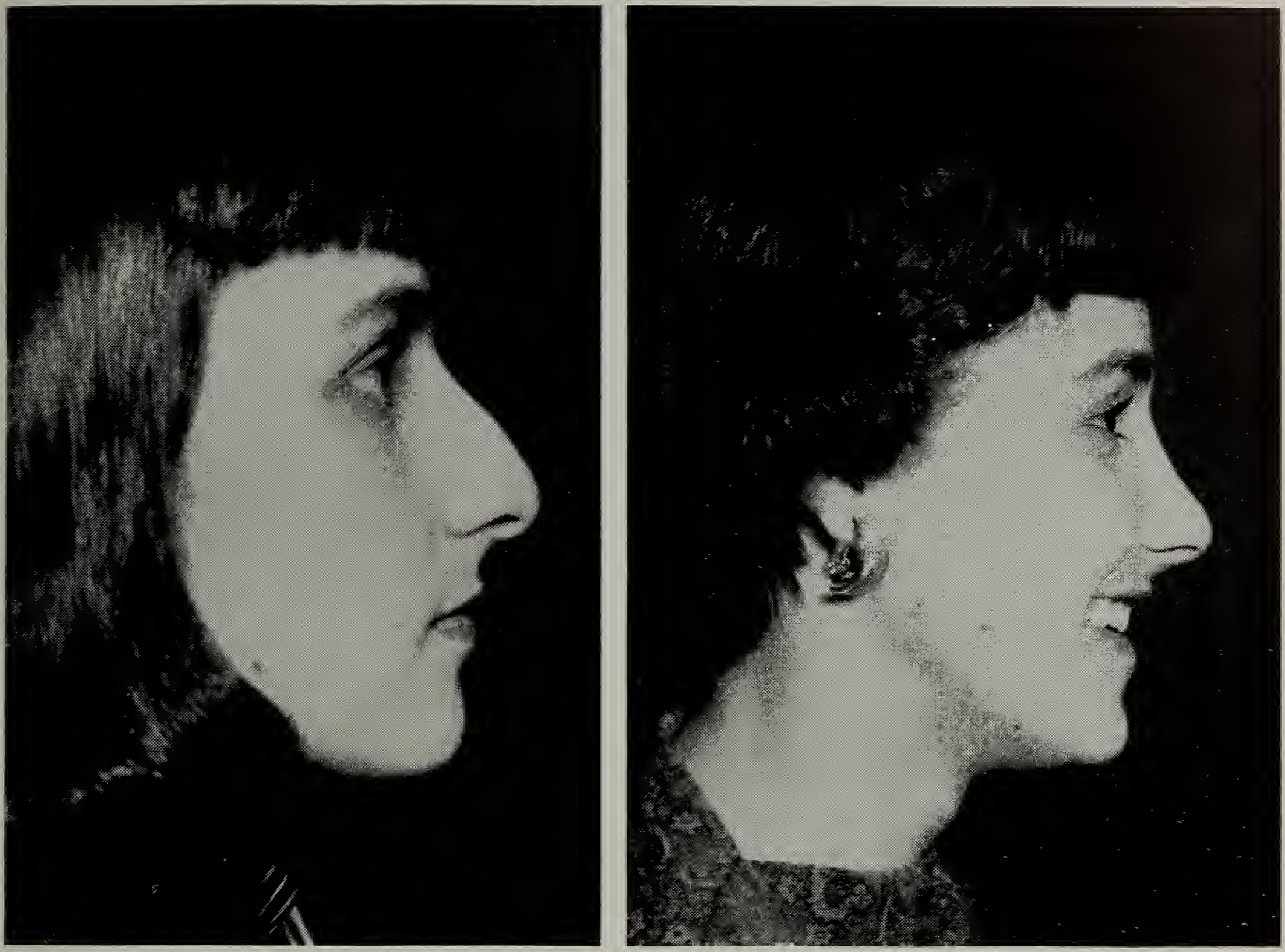

Figure 2.

The period of postoperative resolution is lengthy, not less than three months, and often extending up to a year. During this time, the initial result, which will be an improvement over the preoperative nose, will gradually become even better. During maturation, the skin, which is tense and firm, gradually softens, the "wooden" feeling of the nasal tip is replaced by normal plasticity, and cutaneous adhesions, which may indent the alar wing or dorsum, soften and fade. Both patient and surgeon need patience and understanding at this time, for it is during this period that casual remarks by friends may suggest to the patient that the rhinoplasty is a failure.

Although described above as a technician, any surgeon and particularly the rhinoplasty surgeon must be much more than that. Accurate appraisals and judgments must be made from beginning to end. An outstanding rhinoplasty surgeon has said[2] " . . . (the) esthetic sense can be developed with training and experience if there is an inborn foundation for it; if not, it is as futile as attempting to make a musician of one who is tone deaf." Failures with rhinoplasty thereby may follow a poor selection of anatomic types. Unless the nose is the dominent disharmonious feature of an otherwise pleasing face, rhinoplasty cannot hope to effect a fully satisfying change, and may, in fact, fashion an oddly curious countenance and thereby perform a genuine disservice.

Often skillful rhinoplasty surgeons find their work increasingly restricted to rhinoplasty alone. Gradually and inevitably, unless particular care is taken against this insidious attack, each nose begins to look somewhat like its predecessor. Each beautiful, but not in harmony with its owner's face. This, too, constitutes failure. If there is, to the casual observer, a clue that

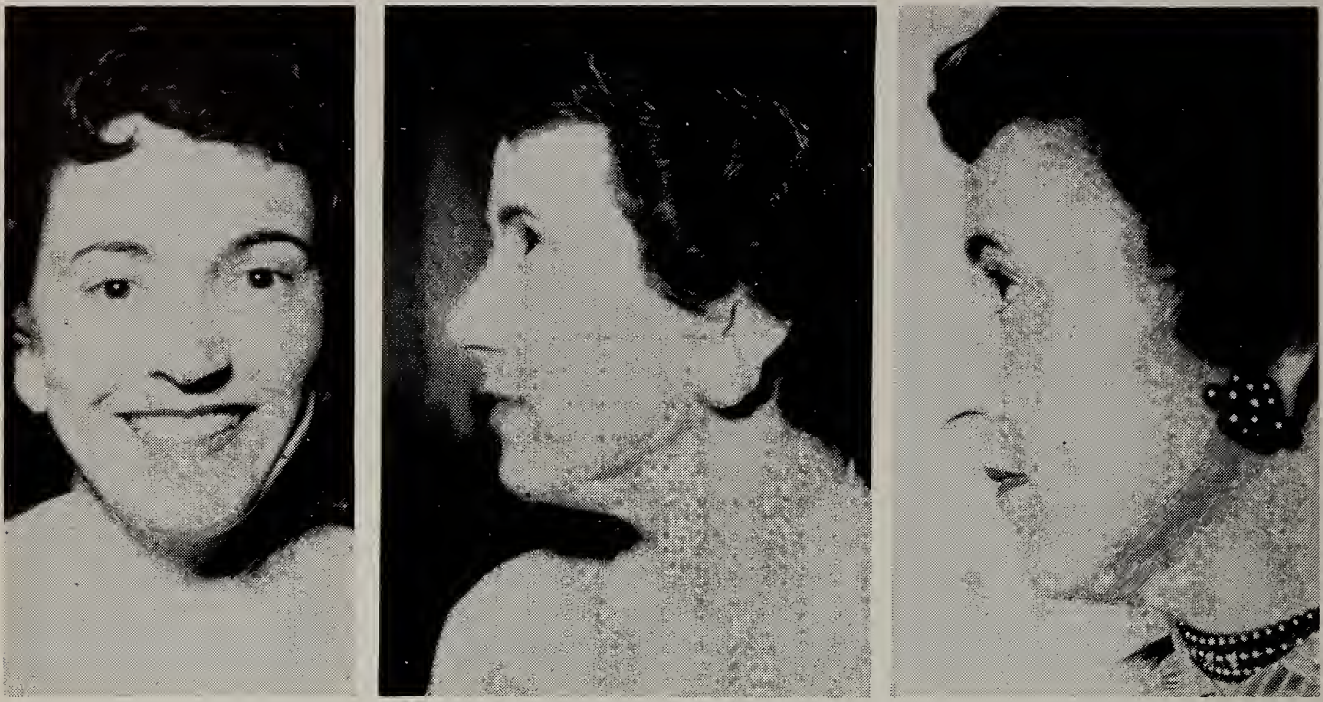

Figure 3.

a rhinoplasty has been done, the operation is less than a total success. The postoperative rhinoplasty should look, feel and perform as if it were the patient's own original nose. One nose will not fit another's face, each must *belong*.

Figure I illustrates the result following the reduction of a generally gross nose having no predominant preoperative deformity. The alar rims have been lifted to give more columellar exposure, and the total nasal pyramid has been reduced by about one-third. This has the secondary effect of appearing to reduce the cheek mass, elevate the forehead, and soften the chin line.

Figure 2 presents a reduced hump nose, which originally led into a bulbous and dependent nasal tip. The face is generally softened. All features appear more delicate, and a pleasing, youthful face results.

Figure 3 also demonstrates the rejuvenation possibilities in rhinoplasty. The long, droopy tip has been elevated and the dorsal line reduced. Again the optical illusion of advancement of the chin is evident. In these illustrations, the psychological impact to each individual cannot be projected. The tides of personal response perhaps reflect in the smiles of the postoperative photographs, but their depths are poorly understood.

It has long been recognized that the nose constitutes a prime sexual symbol.[17] To the surgeon, the complexity of this machination remains a mystery. Herein lies the most serious cause of failure in rhinoplasty. Nothing can be more distressing to patient and surgeon alike than a failure to appreciate preoperatively that a rhinoplasty is not what is required. Rather an extensive psychologic, if not psychiatric, readjustment may be what is essential. A patient with a beautiful rhinoplasty may constitute a miserable failure because of this. Rhinoplasty can change a nose, but not a way of life. Unfortunately, each of us considers himself well adjusted. One's work and social record may seem to bear this out, and it is not until a cosmetic rhinoplasty has failed to effect the result desired by the patient that it becomes belatedly apparent that subconscious desires have prompted the original call for help. Then, by his well meaning, although indiscreet efforts, the surgeon adds to, rather than subtracts from the patient's inner torment. When this unfortunate situation can be detected in advance, a psychiatric consultation has been of extreme value and, although occasionally misleading, it can lend support and expert confirmation on a dubious candidate.[3, 6]

Perhaps this discussion has led to the conclusion that advising and performing rhinoplasty is to both the surgeon and patient somewhat like playing with a loaded gun—and to some degree, this is perhaps true—yet really not, for when advised and applied under careful conditions of selection, conception, and execution, rhinoplasty remains today, as in 1898, one of the most gratifying of all cosmetic operations.

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Delaware Valley Chapter of the American Medical Writers' Association

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Contest is open to interns and residents of Pennsylvania, New Jersey and Delaware.

Subject may be a case report or any other medical scientific paper.

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Manuscripts shall contain a title sheet with the title of the paper and the author's name and address on it. The name and address should not appear on any other part of the manuscript.

Presentations must be received not later than April 1, 1960. They should be sent to Donald C. Geist, M.D., Suite #1705, 1930 Chestnut Street, Philadelphia 3, Pa.

Manuscripts will be returned only if so requested and accompanied by the necessary postage.

No arrangements will be made by the Society for publication of any paper.

Three to five winners, whose names will be announced by the Society, will be awarded cash prizes totalling $300.

MANIFESTATIONS OF COXSACKIE GROUP B INFECTIONS IN CHILDREN

WITH SPECIAL REFERENCE TO VARIOUS TYPE 5 ENTITIES

● The case reports of three children with Coxsackie Group B, infection are presented. The first, simulated aseptic meningitis; the second, non-paralytic poliomyelitis; and the third had only rapidly subsiding fever, chills and muscular cramps. The author shows that one particular virus can cause a wide spectrum of illness creating a dilemma wherein the physician must distinguish between a bacterial or virus infection and decide to treat or not to treat with an antibiotic.

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The purpose of this paper is two-fold:

1) A review of part of the literature concerning Coxsackie Group B infections in children; and
2) To report on the varied clinical signs and symptoms seen with infections caused by the Coxsackie B Type 5 virus specifically.

Three pediatric patients were seen in the summer of 1958 during a month's interval with varying manifestations of disease which are felt to be attributable to this one particular virus (Coxsackie type B-5) on the basis of serological and/or isolation findings.

General Coxsackie Viral Infections

Dalldorf and Sickles in 1948 were the first to isolate the Coxsackie virus.[1] In their original paper they described a poliomyelitis-like illness in a nine year old boy who seven months later still was unable to sit up from a recumbent position because of truncal muscle weakness, although the weakness of other muscles had disappeared. Their second case concerned a three and one-half year old boy who had weakness of his abductors and inversion of his left foot when walking six weeks after his initial illness; he subsequently recovered completely. By appropriate cultural and serological means, they were able to demonstrate the existence of this new agent and its ability to cause clinical infection in man.

Divided Into Two Main Groups

Since this original identification, much investigative work has been done regarding disease entities caused by Coxsackie virus infections. It has been well established that they can cause herpangina, epidemic pleurodynia (seen mostly in the adult age group), encephalitis, aseptic meningitis, and myocarditis.[2]

As of 1955, Dalldorf divided the Coxsackie viruses into two main groups: those agents producing predominantly skeletal-muscle inflammation in the mouse fell into group A; those agents causing changes in other organs, such as the brain, pancreas, fat pads (as well as muscle to a lesser degree) fell into group B.[3] Parrot, likewise, states that "group A Coxsackie viruses are those which produce paralysis and marked degeneration in muscle but no significant lesions in the central nervous system in suckling mice, and cause no apparent disease in adult mice. Group B Coxsackie viruses tend to cause encephalomyelitis, focal myositis, pancreatitis and fat necrosis. Clinically, group A viruses are associated with herpangina and the group B virus is associated with pleurodynia and aseptic meningitis."[4] This basis for division of Coxsackie viruses into group A and group B is also the feeling of Kibrick and Benirschke.[5]

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Early Reports

There are many reports in the literature of the disease entities caused by the Coxsackie group B viruses. McLeod and his associates reported on a study of seventeen cases of aseptic meningitis caused by Coxsackie B viruses, adequately evaluated to exclude a concurrent infection with polio-virus.[6] The main clinical features of these cases of aseptic meningitis were pyrexia, signs of nuchal irritation, nausea and vomiting, headache, drowsiness, and myalgia. Not one of their cases developed paralysis or residual muscular weakness. Examination of the cerebrospinal fluid revealed a pleocytosis of between eleven to five hundred white blood cells per cubic millimeter. The average white blood count per cubic millimeter was one hundred and seventy-one, and the cerebrospinal fluid protein was usually normal or slightly elevated. The strains isolated in their study were Coxsackie group B_1, B_2 and B_4.

Likewise, Javett and his group described an outbreak in a maternity home in Johannesburg in which a number of newborn babies became ill while in, or soon after discharge from, the particular maternity home in which they were born.[7] This outbreak occurred in October and November of 1952 at a time when epidemic pleurodynia (Bornholm disease) was quite prevalent. The age of onset of the disease varied from five to seventeen days of life; and of the ten babies so afflicted, six died. Postmortem study showed a patchy myocarditis and foci of encephalitis. Bacteriological studies were negative and the illnesses were felt to be related to the Coxsackie group B viruses.

Neonatal Cases Serious

Coxsackie group B virus infections are of much more serious consequence in the neonatal period it would seem. Hosier and Newton reported on the isolation of a Coxsackie group B type 4 virus from the myocardium of a seven week old infant who died in heart failure, and from the myocardium, liver, lungs and kidney of a fourteen day old infant who died of sepsis of unknown cause.[8] They also recorded the history of a five year old boy admitted in heart failure who recovered completely from myocarditis, as evidenced by electrocardiographic changes, during which time group B type 2 Coxsackie virus was isolated from the stool of the child with a subsequent rise of the homologous serum neutralizing antibodies. This latter child was treated with steroids.

The fourteen day old infant also showed extensive focal necrosis of the liver (she was clinically jaundiced), a mild meningoencephalitis and a focal necrotizing infection of the adrenals. The first two cases reported above brought the total to twelve of infants reported to have died with myocarditis associated with a group B Coxsackie virus at that time. Noteworthy was the author's comment that the seven week old child was the eldest to have died of proven Coxsackie viral myocarditis at that time. Furthermore, of the twelve cases reported up until that time, fifty per cent showed involvement of the central nervous system and thirty-three per cent showed changes in the liver consistent with those produced by other viruses. Likewise, sixteen per cent showed adrenal involvement; and, thus the authors feel that Coxsackie group B virus infections can be systemic, similar to those seen in infants dying with systemic herpes simplex or salivary gland virus infections. This is an excellent article on the suggested relationship between neonatal infections and viral, especially Coxsackie group B, etiologies.

Fatalities Occur

Kibrick and Benirschke, at approximately the same time, were reporting two additional cases of neonatal infections with group B Coxsackie (type 4) virus, both ending fatally.[9] The first case involved a ten day old infant who died within a four and one-half hour period after admission to the hospital with a picture of sepsis associated with congestive heart failure. Coxsackie group B type 4 virus was present in the myocardium in high titer and also was isolated from the feces of two siblings as well. Serological tests on both parents' serum was highly suggestive of a recent Coxsackie group B type 4 infection. At postmortem examination, there were microscopic changes in the myocardium, liver, pancreas, brain and spinal cord. The second case involved a female infant who died at thirty-six hours of life; the viral agent was recovered from the myocardium, spinal cord, and liver, as well as from the feces of the mother. The authors strongly felt that this infection had occurred in utero. The postmortem examination revealed extensive gastrointestinal hemorrhage and massive pulmonary bleeding. There were small foci of myocardial inflammation and degeneration irregularly scattered throughout the heart. The liver showed extensive parenchymal destruction throughout. There were also histological changes in the pancreas and adrenals as well as evidence of early fat necrosis. Likewise, there were histological changes in the brain and spinal cord. It was the authors' feeling that central nervous system involvement in Coxsackie group B virus infections in the neonatal period is relatively common; however, the clinical manifestations of meningitis in the neonatal period are relatively non-specific and may consist of cyanosis, fever, vomiting, lethargy, irritability, jaundice or irregular respirations. Even though one or more of the above signs were present in almost all of their patients, meningoencephalitis was usually not suspected since the predominant clinical features were suggestive instead of cardiac or respiratory disease, especially as the illness in several instances was initiated by sudden circulatory collapse. The authors further pointed out that, up to the time of their article, there were no reports of fatal infection in older children or adults due to the group B Coxsackie viruses. In the older age groups, infection with these agents has been manifested instead by an aseptic meningitis, epidemic myalgia, or by non-specific febrile illnesses.

Noteworthy was Kibrick and Benirschke's unexpected finding of severe destruction of the anterior horn cells, indistinguishable from that of poliomyelitis, in the spinal cords of the first-passage suckling mice inoculated with the agents recovered from the patients in their study. They further noted that in several patients with the clinical diagnosis of paralytic poliomyelitis, attempts to recover poliovirus or to demonstrate antibody response to this agent have not been successful. From several such patients, however, a group B Coxsackie virus has instead been isolated.[10, 11] One child developed extensive paralysis of the right leg and was admitted with the clinical diagnosis of poliomyelitis, but no such virus could be recovered from the feces, which did, however, yield Coxsackie group B type 4 virus. Kibrick and Benirschke point out that this was the same agent that was responsible for the production of the lesions of the anterior horn cells in suckling mice in both of the cases reported by them; and it was their feeling that this was highly suggestive that certain strains of these Coxsackie agents may be capable of inducing poliomyelitis-like lesions, associated with muscle weakness, in man.[9]

Earlier, Kibrick and Benirschke had presented evidence for intrauterine infection with a Coxsackie group B (type 3) virus in an infant in whom meningoencephalitis developed with resultant death seven days after delivery.[5] The mother was well until the 38th week of her pregnancy when she developed symptoms of an upper respiratory illness with coryza, sneezing and malaise. Two days later she bled vaginally and the diagnosis of placenta previa was made and a resultant emergency Caesarean section was performed. Several hours post birth the infant developed a croupy cough and inspiratory crow. Lumbar puncture was performed on the fifth day of life and revealed clear, xanthochromic fluid under normal pressure with a two-plus Pandy and one hundred thirty-two white blood cells per cubic millimeter, ninety-five per cent of which were mononuclear in type. A repeat lumbar puncture the next day revealed three hundred and twenty-seven while blood cells per cubic millimeter, again ninety-five per cent of which were mononuclear. The child was treated with antibiotics but suffered a progressive downhill course and died. The postmortem examination showed a diffuse myocarditis, encephalitis, and degenerative and inflammatory changes in the lateral aspects of the anterior horns of the spinal cord. Virus isolation of the Coxsackie group B type 3 was made from the thoracic cord sections at postmortem examination. They noted at that time that the clinical picture was characterized by a relatively sudden onset, with anorexia, evidence of circulatory and respiratory embarrassment, and a tachycardia with rapid progression to death or recovery. In the case described, neutralizing antibodies for the agent in the blood specimen taken from the mother were found.

CASE PRESENTATIONS

Case No. 1

Case No. 1 was the result of a normal, full term spontaneous delivery after two hours of labor, being born on September 2, 1958. The newborn physical examination and the three day physical examination by the house officers plus the physical examination by the private pediatrician revealed nothing abnormal. There was no history of the infant vomiting or having diarrhea during his hospital stay, and he was discharged on September 6, 1958 after an uneventful, afebrile four-day neonatal period. The baby weighed seven pounds, eight ounces at birth and was discharged with a weight of seven pounds, five ounces. The mother was gravida II, para II, Rh positive and had had an uneventful pregnancy except for German measles contracted during the sixth month of pregnancy.

Infection Symptoms Obscure

Four days after discharge, the patient was readmitted with a six hour history of fever of one hundred two and five-tenths degrees. The baby had fed well that day with no history of drowsiness, lethargy, irritability, vomiting, diarrhea or respiratory distress. Both the parents were said to be in good health at the time of birth and immediately following it, as was the other sibling at home. However, the parents did mention that there appeared to be a lot of diarrhea in the neighborhood. The baby was seen at home just prior to his admission and nothing was noted on physical examination except a questionably full fontanelle which was not tense or pulsating.

Physical examination on admission to the hospital revealed a well-developed, well-nourished white male in no acute distress. The pulse was one hundred and ten per minute and regular; respirations were twenty-four and regular; temperature one hundred two and two-tenths degrees. Examination of the head, ears, eyes, nose and throat was unremarkable except for the above mentioned full fontanelle and an inconstant nystagmus to the left, which had never been noted previously. There was no nuchal rigidity or retraction, and the neck was passively flexed without difficulty. The lung and heart findings were normal and the rest of the physical examination, including the neurological examination, was unremarkable.

Soon after admission, because of the full fontanelle and evidence of a nystagmus not previously known to be present, a lumbar puncture was performed which revealed an opening pressure of one hundred and ten millimeters of cerebrospinal fluid. Approximately six to seven ccs. of cloudy cerebrospinal fluid was removed and sent for analysis which revealed: cells ,two thousand white blood cells per cubic millimeter, seventy per cent being mononuclear cells; Pandy, four plus; protein one hundred forty-six milligrams per cent; sugar fifty-two milligrams per cent; chloride, one hundred twenty-three meq/1. Three slides were prepared from the cerebrospinal fluid specimen and stained with Gram's stain and careful microscopic examination failed to reveal any organism. Admission laboratory work revealed a hemoglobin of fifteen and eight-tenths grams with a white blood count of fifteen thousand one hundred; the differential count revealed fifty per cent polys, eleven per cent bands, thirty-four per cent lymphocytes, three per cent monocytes and two per cent eosinophiles.

Because it was felt that this baby probably had a bacterial meningitis, most likely E. coli statistically, chloromycetin, sulfadiazine, and penicillin therapy was initiated pending the report on the cerebrospinal fluid cultures. The temperature remained at one hundred and two degrees for the first twelve hours and then fell, in a typical lytic curve, to normal where it remained throughout the baby's hospital stay. Since the cerebrospinal fluid culture was negative and the baby was doing well clinically, the penicillin was discontinued on September fifteenth and the sulfadiazine discontinued on September sixteenth. A second spinal tap was performed on September eighteenth, eight days after admission, and the specimen obtained was slightly cloudy with a two plus Pandy; there were three hundred twenty-nine white blood cells per cubic millimeter, ninety per cent of which were lymphocytes; many RBC were noted; the protein was one hundred milligrams per cent and the cerebrospinal fluid sugar was thirty-eight milligram per cent. Chloromycetin was discontinued on September nineteenth and the baby had an uneventful recovery until discharge on September twenty-first. There was no clinical evidence of cardiac involvement; unfortunately, no electrocardiogram was taken. The nystagmus disappeared after the first forty-eight hours.

Laboratory Data

Culture of the umbilical cord grew out E. coli and alpha streptococcus. The two cerebrospinal fluid cultures submitted revealed no growth after an appropriate time interval. The throat culture grew out hemolytic Staphylococcus albus, coagulase negative, and alpha streptococcus. Blood culture taken on admission revealed no growth.

The first two blood samples sent for virus studies were negative for evidence of lymphocytic choriomeningitis, mumps, and polio virus 1, 2 and 3 antibodies. The first stool specimen sent failed to show any virus present; however, from the second stool specimen Coxsackie group B type 5 was isolated as was also done from the throat swab taken for viral studies.

The parents were contacted approximately one month after this child's illness and an extensive effort was made to elicit some indication of an infection in the family at the time that this child became ill. However, aside from the history of diarrhea in the neighborhood, no history suggestive of any type of infection could be elicited.

Case No.2

Case No. 2 is a seven year old white boy who was admitted on August seventeenth, 1958, with a twelve hour history of vomiting, stiff neck and fever. The patient, a physician's son, and the rest of the family had just returned from a vacation in New Hampshire where three of the five children, including the patient, were said to have contracted viral upper respiratory infections. The patient had had a rather severe cough and had been treated with Gantrisin. That illness had lasted approximately seven days, ending about five days prior to admission. Some time during the night prior to admission, the patient vomited but did not call out to his parents; however, that morning he awoke with a stiff neck and called for his parents. At this time the father also noted the evidence of a stiff neck. Later that day, the patient developed a fever of one hundred two degrees and was admitted to the hospital. Physical examination revealed a pulse of one hundred ten per minute which was regular; a temperature of one hundred two degrees; and a respiratory rate of twenty-two per minute which was regular. He was a well developed, well nourished white made of seven, lying quietly in bed in no acute distress but appearing ill. He was alert and oriented as to time, person and place. There was no sign of dehydration, shortness of breath, cyanosis or jaundice. Positive physical findings were limited to: 1) slightly injected throat; 2) slight muscular soreness in the neighborhood of the neck but the neck could be flexed fairly well and there was no evidence of opisthotonus; 3) negative Kernig's and Brudzinski's signs; and 4) physiological deep tendon reflexes.

Laboratory Data

There was no evidence of any abnormal neurological findings. Laboratory data on admission revealed a hemoglobin of fifteen and three-tenths grams with hematocrit of thirty-nine. White blood count was twelve thousand nine hundred and fifty with sixty-six polys, five bands, twenty-eight lymphocytes and two monocytes. A repeat hemogram on the following day revealed a hemoglobin of thirteen and two-tenth grams with an hematocrit of thirty-eight and a white blood count of eight thousand eight hundred, the differential showing sixty-two per cent polys, two per cent bands, twenty-four per cent lymphocytes, four per cent atypical lymphocytes and six per cent monocytes. The admission urinalysis was unremarkable. A lumbar puncture was performed soon after admission and the opening pressure was greater than two hundred and seventy-five millimeters of cerebrospinal fluid (the patient vomited just after this reading), and about ten cc. of clear, colorless fluid was removed without incident. The closing pressure was one hundred to one hundred fifty millimeters of cerebrospinal fluid. Analysis of the cerebrospinal fluid revealed: 1) one hundred twenty-nine white blood cells per cubic millimeter, ninety per cent being mononuclear cells; 2) negative Pandy; 3) ninety-two milligrams per cent protein; 4) fifty-five milligrams per cent sugar; and 5) one hundred nine mEq/1 of chloride. First and intermediate strength PPD's were applied and read as negative subsequently.

Progress in the hospital: The patient was seen on August twentieth by a neurologist because of pain radiating down the left leg. Physical examination at that time revealed slight nuchal stiffness and evidence of stiffness down the back of the left leg. There were no other physical findings and the neurological examintion was completely negative. He was again seen by the neurologist the following day who felt the neck was slightly stiffer and noted pain to be present down both legs on straight leg raising tests. The temperature came down to normal during the first forty-eight hours of hospitalization and the patient was discharged on August 24, 1958, after conservative therapy was administered.

Culture of the throat revealed normal flora. The first two blood specimens were negative for evidence of lymphocytic choriomeningitis, mumps, and polio viruses 1, 2 and 3 antibodies. However, Coxsackie B type 5 was isolated in tissue culture from the throat washings, cerebrospinal fluid, and three stool specimens submitted.

Case No. 3

Case No. 3 is a three year old white boy who was admitted on October 1, 1958 with an eighteen hour history of muscle pain, elevated temperature to one hundred four degrees, and chills. There was no history of lethargy, nausea, vomiting or diarrhea. Pain was present in the arms and legs, crampy in nature and relieved somewhat by massaging and heat. One sibling had had an elevated temperature for a twenty-four hour period four days prior to admission of the patient and this sibling had vomited one time. There was no history of joint or muscle pain in the affected sibling. The father had had an upper respiratory infection and sore throat one week prior to the patient's admission.

The patient was the result of a normal full term spontaneous delivery after a five hour labor with a birth weight of six pounds, twelve ounces and a resultant normal development. An episode of chicken-pox was the only childhood disease encountered. The patient had been admitted two years prior to this admission for evidence of portal obstruction with esophageal hemorrhage. There was a history of diabetes on both the maternal and paternal sides of the family.

Laboratory Data

Physical examination on admission revealed a well developed, slightly malnourished white boy of three years complaining of generalized severe muscle cramps. Positive physical findings revealed: 1) the spleen was down to the level of the umbilicus; 2) the liver was not felt: 3) the muscles of the extremities were intermittently spastic and firm associated with severe pain when touched. The neurological examination was entirely within normal limits. Laboratory data on admission revealed a hemoglobin of eleven and six-tenths grams with hematocrit of thirty-four. The white blood count was twelve thousand one hundred with fifty-nine polys, fourteen bands, twenty-three lymphocytes and four monocytes with evidence of slight toxic degeneration on the smear. The platelet count was ninety-seven thousand. Admission urinalysis was essentially unremarkable. The calcium was ten and four-tenths milligrams per cent and the phosphorus was two and nine-tenths milligrams per cent. The alkaline phosphatase was ten units.

Progress in the hospital: The patient was afebrile throughout his entire hospital stay and the muscular cramps were gone within a period of twenty-four hours. He was treated with aspirin and hot compresses, being discharged on October 3, 1958, with a final diagnosis of viral myositis. Throat culture grew out alpha streptococcus. Coxsackie group B type 5 virus was isolated from the throat washings and stool cultures.

Review Of Coxsackie Group B Type 5 Infections

Coxsackie group B, type 5, was first isolated by Steigman in 1952.[12] Since that time numerous forms of infection have been attributed to this one particular type of virus. Syverton and his associates, in an attempt to elicit the etiologic agent(s) of the many cases seen of "non-typical poliomyelitis" accordingly undertook in 1956 a program to establish the viral etiology of each aseptic illness involving the central nervous system not proved to be poliomyelitis.[13] The occurrence of an epidemic form of aseptic meningitis in Minnesota in the summer and autumn of 1956 afforded this opportunity. In this outbreak of aseptic meningitis, Coxsackie virus strains were isolated from sixty-two patients ill between July and December, 1956. The virus was isolated in submitted stool and/or throat washing specimens anywhere from the first to the twelfth or thirteenth day of onset of the illness. None was isolated from the cerebrospinal fluid of patients in their series.

False Reports In 1956

During 1956, Minnesota physicians reported one hundred seventy-nine illnesses categorized as "epidemic poliomyelitis." Sixty-six patients had one or more limbs paralyzed: forty-two patients with paralytic and five with non-paralytic disease yielded viruses classified as thirty-nine strains of type 1 and eight strains of type 3 polioviruses. The one hundred thirteen patients with no indication of paralysis had various diagnosis made. They yielded sixty-two viruses other than poliovirus and sixty-one of these sixty-two viruses were identified as Coxsackie virus, immunotype B 5. Evidence against concurrent polio virus infection was given by 1) failure to isolate polio virus from the sixty-one patients with aseptic meningtitis who yielded Coxsackie group B, type 5 virus; 2) insignificant changes in titer of antibody in forty-two paired samples of patients' serum to types 1 through 3 polio virus; and 3) occurrence of aseptic meningitis without relation to history of vaccination with formalin inactivated trivalent polio vaccine.

On clinical grounds alone, the syndrome exhibited by the sixty-one patients infected with Coxsackie group B, type 5 virus could not be distinguished from non-paralytic disease caused by infection with polio virus. In this quite large series, the age range was from six months to forty-five years, the largest number of cases, however, occurring in the age group of five to nine years. Symptoms included sudden onset of fever with severe headache, stiff neck or back, leg pains or gastrointestinal symptoms. The cerebrospinal fluid showed a pleocytosis, predominantly lymphocytes. Weakness or paralysis of the limbs was not a feature of their cases of aseptic meningitis.

Coincidentally, at the same time, Rubin and his group were studying an epidemic of aseptic meningitis which occurred during the summer of 1956 in Iowa.[14] A total of sixty-three hospitalized and fifty-two non-hospitalized patients were studied. Again, specimens of serum, stool, throat washings and cerebrospinal fluid (if obtained) were submitted for the etiological diagnosis.

Broad Clinical Spectrum

The outstanding characteristic of this illness was the broad clinical spectrum which presented itself, ranging from very minor symptoms to the syndrome of aseptic meningitis requiring hospitalization. The latter patients appeared acutely ill and usually presented with the chief complaints of severe headache and stiff neck. Myalgia was also noted in over one-third of the hospitalized patients.

Coxsackie virus group B, type 5 was isolated from the stools, throat washings and cerebrospinal fluid specimens, the greatest number of isolations being obtained from stool specimens. It should be noted that only two of the nineteen cerebrospinal fluid specimens submitted were able to show isolation of this one particular virus. Isolation of the virus from the stool specimens occurred anywhere from the first to the thirty-sixth day of illness.

Fluid Analysis

Cerebrospinal fluid analysis in those patients from which it was obtained revealed a count anywhere from zero to two thousand four hundred white blood cells per cubic millimeter with an average of five hundred seventy cells and a median of four hundred twenty-four cells per cubic millimeter. The differential count on the cells in the cerebrospinal fluids usually showed a lymphocytic response although polymorphonucleated cells were seen early in the illness. The total protein of the cerebrospinal fluid varied from fifteen to ninety milligrams per cent with an average of forty-one milligrams per cent. Admission white blood counts in their series ranged from four thousand five hundred to twenty thousand; sixty-seven per cent of the white blood counts were less than ten thousand. The great majority of the differential counts were within normal limits. Interestingly enough, the authors point out that the absence of nuchal rigidity does not rule out the aseptic meningitis syndrome, the highest count (two thousand four hundred white blood cells per cubic millimeter) in the cerebrospinal fluid occurred in a patient with only questionable meningeal irritation. One-third of all of their cases occurred in the age group of five to nine years and two-thirds of all cases occurred in people less than twenty years of age. Weinstein, however, does recount the case of acute benign pericarditis in a twenty-five year old man associated with a Coxsackie virus group B type 5 infection.[15]

Person To Person

Rubin and his group felt that the spread of the infection was by person to person contact, either by means of the gastrointestinal tract or from the oropharynx. The incubation period is felt to be three to five days.

DISCUSSION

It is felt that the three cases presented in this rather short series are representative of the spectrum of disease which a Coxsackie group B, type 5 virus may cause. Certainly the first case presented falls within the accepted criteria for the diagnosis of aseptic meningitis. Since there was no evidence of a bacterial infection, it is felt that the etiological agent was definitely the Coxsackie group B type 5 virus. On the basis of what is felt to be a three to five day incubation period for this particular agent, the infant must have contracted his illness either on the day of discharge from the hospital or during the following twenty-four hours at home. We certainly do not postulate that this was an intrauterine infection. Unfortunately, no blood specimens or stool cultures were obtained from either parent or sibling, and certainly we have no reason to implicate them, especially in view of their repeated denials of any symptoms suggestive of an illness. It is felt that this represents the first case of aseptic meningitis due to Coxsackie group B, type 5 in a child as young as this one was. In retrospect, in view of the rather poor prognosis that one obtains in reviewing the literature, we certainly feel quite fortunate that this child recovered in such an easy fashion. Whether other organs were involved in this infection, notably the heart, we have no way of proving. It is unfortunate that an electrocardiographic tracing was not taken during the first twenty-four hours of admission. We feel quite certain that the antibiotic therapy employed in this particular case had nothing to do with the infant's recovery.

Can Viruses Cause Paralysis?

The second case is of particular interest in that without appropriate viral studies this child most likely would have had the final diagnosis of non-paralytic poliomyelitis. Certainly the clinical course and the laboratory findings would be compatible with this diagnosis. This case is of further interest in that it affords a stepping stone to the discussion of whether viruses other than the polio viruses can cause paralysis. During this child's first three to four days of hospitalization, the possibility of this being a paralytic poliomyelitis certainly was entertained. Several observers who examined the child felt that there was evidence of muscular weakness developing in the left leg. At any rate this did not progress to any sufficient degree, and at the time of discharge the child had no evidence of any muscular weakness.

Similarities Of Clinical Poliomyelitis To Coxsackie Viruses

Hammon and his group feel that it has been shown that certain enteroviruses, such as Coxsackie A_7, ECHO-2, ECHO-6, ECHO-9, and some Coxsackie group B, may cause paralytic illnesses resembling poliomyelitis clinically.[16] Their report further showed that other members of the Coxsackie and ECHO groups may or actually do cause mild paralysis. Three cases of clinical paralytic poliomyelitis-like disease without evidence of concurrent polio infection were presented. From these three particular cases a Coxsackie virus was isolated one was due to Coxsackie B-4; the second was due to Coxsackie B-3, and the third was felt to be due to Coxsackie A-9. They further presented three paralytic cases probably without poliovirus infection in which ECHO-16 and ECHO-4 viruses were isolated. They emphasized that these six illnesses had been diagnosed as clinical paralytic poliomyelitis by a team of experienced poliomyelitis clinicians. It is now felt that these illnesses represent "paralytic poliomyelitis-like" cases since, essentially, there was no laboratory evidence of a poliomyelitis infection.

Likewise, Blattner reviewed the problem of poliomyelitis-like illnesses and feels that there is incriminating evidence to suggest that many of these diseases are caused by both group A and group B Coxsackie viruses.[2]

Habel and Loomis discussed the relationship of Coxsackie group A, type 7 virus and the Russian poliovirus type 4.[17] The latter virus had been isolated from fecal specimens obtained from children during an acute phase of a clinical illness which seemed to have the classical characteristics of paralytic poliomyelitis. The authors later proved that this virus was identical with stains of Coxsackie group A, type 7 virus isolated from children with aseptic meningitis. According to the authors, these Coxsackie A-7 strains, like the Russian polio virus type 4, "are capable of producing in the central nervous system of some monkeys, lesions which are indistinguishable from those caused by polio viruses." They concluded that "certainly our present knowledge. . .should emphasize the necessity of search for these other viruses in paralytic cases where the specific etiology of poliovirus cannot be established." Likewise, one must not consider the polio vaccine to be a "failure" till proven by appropriate isolation and serological tests that the particular paralytic infection is due to a poliovirus and not one of the other enteroviruses. The present author feels that it is extremely important that disease suggestive of poliomyelitis be proven to be so by appropriate viral studies. This type of approach to the problem certainly is necessary in evaluating the presence of an "epidemic" or the value of the present poliomyelitis vaccine.

The third case presented certainly does not represent a serious illness when compared to the other two cases. One must go even further in saying that this illness was *associated* with a Coxsackie group B, type 5 virus; certainly we cannot prove that the signs and symptoms were definitely related to this particular etiological agent. It is well known that a large percentage of children during the summer and autumn months excrete enteroviruses without being clinically ill. Therefore, one cannot rationally exclude the possibility that this child's problem was on the basis of an etiological agent other than the Coxsackie group B, type 5 virus. However, circumstantially, the latter virus would seem to be the most likely etiological agent.

SUMMARY

A review of part of the literature on Coxsackie Group B infections in children is presented, with special reference to the various clinical entities caused by Coxsackie Group B, type 5 virus.

Differential Diagnosis

Three cases are also presented in an attempt to show the spectrum of disease which may be caused by the Coxsackie group B, type 5 virus. The first case presented is that of aseptic meningitis in a nine day old infant. It is felt that this case represents the first reported of an infection of this type with Coxsackie group B, type 5 virus in an infant this young. The second case is that of a poliomyelitis-like illness and it is suggested that all illnesses of this type be studied fully from the viral diagnostic aspect. The final case presented is a relatively benign one with signs and symptoms suggestive of a myalgia.

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ADDENDUM

The author wishes to express his sincere appreciation to Dr. Klaus Hummeler of the Virus Diagnostic Laboratory of the University of Pennsylvania for performing the necessary viral diagnostic tests in order to establish the etiological agents in these particular cases.

The author also wishes to thank Dr. Henry Stroud and Dr. John Maroney for permission to use the cases on their private services in the presentation of the three cases described.

DIAGNOSIS AND DIFFERENTIAL DIAGNOSIS OF ANEMIA*

● The final section of Part II concludes the author's comprehensive outline on a subject which must always be considered as a "danger signal symptom" in a patient.

Andrey Georgieff**

The following anemias are due to intracorpuscular causes:

1) *Hereditary spherocytosis* (also called congenital hemolytic jaundice etc.). This is a familial and hereditary disorder characterized by spherocytosis, increased osmotic fragility of the red blood cells, splenomegaly, and a variable degree of hemolytic anemia.

Jaundice and splenomegaly are the most common manifestations and may pass unnoticed for many years. Symptoms of anemia are usually absent or mild. At any time from birth to late adult life, attention may be drawn to the disorder by the crisis of deglobulization, which is characterized by fever, lassitude, palpitation, and shortness of breath or even violent abdominal pain, vomiting, and anorexia.

The life span of red blood cells is very brief.

The anemia is usually moderate in degree but may be very mild or severe. It is normocytic or simple microcytic in type but, when severe and associated with market reticulocytosis, it can be marcrocytic. There is little poikilocytosis, but small bright, deeply staining red blood cells (spherocytes) are often seen among the cells of normal size. Reticulocytes are characteristically increased in number. Polychromatophilia and normoblasts may be seen in the blood smear. The leukocytes are usually normal in number or slightly increased. The platelet count is generally normal. Increased osmotic fragility of the red blood cells is characteristic. There is bilirubinemia of the "indirect" type and increased quantities of urobilinogen in the urine and stools, without bile in the urine (acholuric). The Coombs' test is negative.

Differential diagnosis: It is especially important to distinguish cases of congenital non-spherocytic anemia because they have not been benefited by splenectomy.

2) *Hereditary non-spherocytic hemolytic anemia:* Although such cases resemble hereditary spherocytosis in their mode of inheritance, they differ in that the anemia is generally macrocytic; there is often a moderate degree of ovalocytosis, and sometimes there is conspicuous punctate baso-

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*Third section of Part II. The first part of the article "Anemia" appeared in the November, 1958 issue of the JOURNAL.

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philia. Spherocytes are not found, and osmotic fragility is normal.

3) *Thalassemia (Mediterranean anemia).* This is a hypochromic microcytic anemia which is characterized by the presence of unusually thin red blood cells, miscrocytosis, various degrees of anemia, and, when the anemia is severe, numerous nucleated red blood cells. In Thailand, it is the most common hemolytic anemia.

The full-blown disorder (Thalassemia major, Cooley's anemia) develops insidiously within the first year or two of life, and is marked by pallor and great enlargement of the spleen and even the liver. Roentgenograms reveal great thickening of the diploe of the skull with perpendicular striation, increase in the medullary portion of the long bones with thinning of the cortex, and other changes attributable to the extreme hyperplosia of the bone marrow. The anemia is severe, hypochromic and microcytic in type, and the red blood cells contain so little hemoglobin and are so thin that they produce forms which have the appearance of targets. Fragility tests in hypotonic saline solutions reveal that the red blood cells are unusually resistant to hemolysis by this means. Nucleated red blood cells and microblasts are seen, also there is anisocytoses, poikilocytosis, target cells, polychromatophilia, basophilic stippling, Howell-Jolly bodies, moderate reticulocytosis, and leukocytosis with shift to the left. There is usually slight or moderate bilirubinemia, with a corresponding increase in the urobilinogen content of the urine and stools.

Thalassemia minor, on the other hand may pass entirely unnoticed, since painstaking examination may be necessary to reveal any abnormality. Slight anemia, splenic enlargement, microcytosis and hypochromia, target cells, poikilocytosis out of proportion to the existent anemia, decreased hypotonic saline fragility, basophilic stippling of the red blood cells, and bilirubinemia are some of the signs which, singly or in various combinations, mark this disorder. Roentgenographic changes in the bones similar to, though less pronounced than those found in the severe form, may be observed.

The degree of penetrance of the Thalassemia gene seems to vary greatly. There is a wide range in the manifestations of the heterozygous condition. The term *Thalassemia minima* refers to those instances in which the manifestations are very slight. In some persons the number of red blood cells is actually increased above normal although, since the red blood cells are usually microcytic and hypochromic, the hemoglobin and hematocrit are usually slightly below the average normal values.

Differential Diagnosis in Thalassemia: Plumbism, congenital hemolytic jaundice, and sickle-cell anemia are among the disorders which must be distinguished on the basis of the characteristics already described.

4) *Sickel-cell anemia* is a hereditary anemia characterized by the presence of red blood cells which, under appropriate conditions, assume sickle-shaped or oat-shaped forms. Inheritance of the abnormality from any one parent, the heterozygous state, is represented by the sickle-cell trait, in which sickling of the red blood cells can be demonstrated but is not accompanied by symptoms of anemia. Sickle-cell anemia is the homozygous state in which one abnormal gene has been inherited from each parent. Sickle-cell anemia possesses all the characteristics of a chromic hemolytic anemia with certain special features as well.

The red blood cells of patients with sickle-cell disease contain sickle-cell hemoglobin (S Hemoglobin).

The ratio of S hemoglobin to normal hemoglobin (A hemoglobin) in the blood of individuals with sickle-cell trait is from 22 to 45%, while the amount in the blood of this with sickle-cell anemia is 76 to 100%.

Symptoms: Jaundice and a chromic anemia with few or no complaints are interrupted by periods of increased weakness, episodes of aching pain in the joints or elsewhere in the extremities, or sudden attacks of severe abdominal pain. Roentgenograms may reveal radial striation in the skull, osteoporosis in the vertebral bodies, or other changes in the long bones.

The anemia is usually surprisingly severe, erythrocyte counts below 2.5 million being common. The anemia may be normocytic or macrocytic. Oval, cigar-shaped, or other bizarre forms of red blood cells may be seen in the stained smear. The sickling is brought out clearly in wet films of blood which have been fixed under a cover glass and sealed with paraffin. In cases with sickle-cell anemia the typical sickled and oat-shaped forms with elongated, pointed filaments appear within a few hours. When only the sickle-cell trait exists, 24 hours is often required to produce this change and only a proportion rather than practically all of the cells are affected. By the use of reducing agents such as Na bisulfate, sickling can be hastened and the characteristic forms appear promptly.

In sickle-cell anemia there is reticulocytosis, polychromatophilia, normoblasts, leukocytosis with "shift to the left", increase platelets, hyperbilirubinemia and increased urobilinogen in the urine and stools. Osmotic fragility is decreased, not increased. The bone marrow shows striking normoblastic hyperplasia.

In distinguishing persons with the sickle-cell trait that have some disorder accompanied by anemia from those who have sickle-cell anemia, it must be kept in mind that the former may develop any type of anemia, while in the latter the anemia is always hemolytic in type.

5) *Microdrepanocytic disease* is the name given to the combination of sickle-cell and Thalassemia genes which results in a chromic hemolytic anemia with some of the characteristics of both sickle-cell disease and Thalassemia. The Thalassemia trait has also been observed in association with hemoglobin C, hemoglobin E, and other hemoglobins. Some of the clinical and hematologic manifestations of these combinations are outlined in the table below.

6) *Other* (*besides sickle-cell anemia and Microdrepanocytic disease*) *abnormal hemoglobin syndromes* (*hemoglobinopathies*). The hemoglobin of normal red blood cells is called hemoglobin A. In sickle-cell anemia and sickle-cell trait, the red blood cells contain hemoglobin A and hemoglobin S.

a) Hemoglobin C is the name given to a third type of adult hemoglobin. The incidence in the United States of the gene responsible for hemoglobin C is about 2% in the Negro population, as compared with about 9% for S hemoglobin. Carriers of hemoglobin C are asymptomatic, but target red cells are found in their blood. The hemozygous state is characterized by the presence of a normocytic hemolytic anemia of mild degree or no anemia whatsoever. More than two dozen cases of homogygous hemoglobin C disease have been reported, all in Negroes with but two exceptions.

b) A number of instances have been discovered in which both S and C hemoglobin were demonstrated. The combination of hemoglobin S with C hemoglobin is accompanied by sickling of red blood cells as well as by hemolytic syndrome similar to sickle-cell anemia but differing in that the hemolytic anemia is milder and target cells are more plentiful in the blood.

c) Hemoglobin D is very rare.

d) Hemoglobin E has been found in 13% of the population of Thailand and has been encountered frequently in association with the gene for Thalassemia.

e) Hemoglobin G has been found in Negroes in West Africa.

f) Hemoglobin H has been found very rarely in China, Greece, and Thailand.

g) Hemoglobin I has been found in a Negro family.

h) Hemoglobin J and K have been reported.

In general the trait conditions of the hereditary hemoglobinopathies (heterozygosity) are not associated with a hemolytic anemia or morphologic abnormalities in the blood. The only exception of this rule is the presence of target cells in hemoglobin C trait. As a general rule the homozygous state usually results in a definite hemolytic anemia of varitable severity. An exception to this rule is Hemoglobin C. disease. As another general rule, heterozygosity for two abnormal Hb. genes usually results in hemolytic anemia. However, the gene for hemoglobin G is not associated with detectable-physiologic disturbance. Another rule is that if hemoglobin S is present, either alone or in any combination, the sickle-cell test will be positive.

Hemoblobin S and hemoglobin C, with rare exceptions, are limited to Negroes.

7) *Paroxysmal nocturnal hemoglobinuria* (*Marchiafava-Micheli syndrome*). This is a rare disorder, characterized by signs of hemolytic anemia and is marked by attacks of hemoglobinuria which occur chiefly at night. The fault resides in the red blood cells, which are usually susceptible to acid hemolysis. There is a simple test for demonstarting this. The destruction of the cells is promoted by the accumulation of CO_2 during sleep, an optimum acid pH being required for hemolysis to take place. The name of the test is "Test for Acid Hemolysis".

The defect in the *extra corpuscular hemolytic anemia* lies in the environment of the cells and not within the r.b. cells themselves. Thus, when erythrocytes from a patient with an extracellular type of hemslytic anemia are removed from their unfaxorable environment and are transferred (Test for survival time of r.b. cells) into a normal recipient, they survive for a normal period of time. The extracorpuscular hemolytic anemias are acquired diseases and are not hereditary.

Most extracorpuscular hemopytic anemias are associated with detectable autoantibodies, some with isoantibodies, and in some no antibodies can be demonstrated. In every case of hemolytic anemia look for extracorpuscular causes. Those causes are enumerated in the table of Etiologic classification of anemia. A few words about Paroxysmal cold hemoglobinuria:

Paroxysmal cold hemoglobinuria is an uncommon disorder characterized by the sudden passage of hemoglobin in the urine following local or general exposure to cold. The hemoglobinuria is due to the sudden intravascular hemolysis of blood as the result of the action of an autohemolysin contained in the patient's blood. Appropriated tests have been devised to demonstrate such a cold hemolysin. At the time of hemolytic attacks produced by chilling, strongly positive direct antiglobulin (Coombs') reactions have been observed, but they become negative after the attacks. The typical condition is manifestation of syphilis. A number of cases have been described, however, in which indications of syphilis were lacking.

III. Anemias Due to Decreased Rate of Red Blood Cells Formation

A. *Anemias due to inhibition (depression) of the rate of red blood formation*

1) Chronic infections are associated with profound disturbance in iron metabolism. This is manifested by a low plasma iron, reduced iron-binding capacity, and decreased incorporation of iron into hemoglobin. The defect cannot be altered by iron administration, even if iron is given parenterally in large quantities. The Anemias associated with infections are far more frequent than hemolytic anemia. Such anemia is usually only moderate in degree: hemoglobin values of 13 to 10 gm./100 ml. of blood are seen more frequently than lower values. The anemia is usually normocytic, and in the smear the red blood cells generally show little abnormality in size or shape, a monotonous picture unaccompanied by polychromatophilia, basophilic stippling, or nucleated red blood cells.

2) The anemias associated with chromic infection or with chromic renal, like aplastic anemia due to the action of a poison, is

differentiated from the anemias due to nutritional deficiency and the anemias due to exaggerated blood destruction by the lack of evidence of hematopoietic activity. Thus the anemia is usually normocytic, and is accompanied by relatively little poikilocytosis or anisocytosis; reticulosytes are normal in number and nucleated red blood cells are not found in the blood smear; the leukocytes are not altered in number from the normal except so far as they may represent a reaction to the underlying disorder.

The bone marrow in anemias due to infections show nothing characteristic. The nucleated red blood cells are of the normoblastic type. The marrow may appear hyperplastic, normal, or hypoplastic.

2. Chronic disease causes morphologic changes in the blood smear and bone marrow similar to these in chronic infection (see above).

3. Chemical and physical agents can depress the bone marrow.

4. Renal insufficiency (uremia) can cause anemia. Unlike the anemia associated with infection, anemia due to renal insufficiency does not have hypoferremia as a constant feature. Like the anemia of infection, however, the anemia of renal insufficiency is closely tied with the underlying disease and is uninfluenced by measures other than those which affect renal function. Corresponding rather closely to the gravity of the renal disorder, as manifested by the degree of retention of nitrogenous and other waste products, hemoglobin values as low as 5 gm/100 ml. are found; and the blood smear may reveal normoblasts, stippling and moderate anisocytosis and poikilocytosis. The anemia may be somewhat microcytic or hypochromic, and occasionally is macrocytic. The bone marrow is as in anemia due to chronic infections.

B. *Mechanical interference with blood formation in the bone marrow* (*Mechanical displacement of the bone marrow. Myelophthisic anemia*)

Leukemia, Hodgkin's disease, myelofibrosis, malignancy with metastasis to the bone marrow, multiple myeloma, and marble bone disease may cause anemia. The morphologic changes in the blood are as in anemia caused by chronic infection.

Malignant disease is not necessarily accompanied by anemia. Anemia accompanies malignancy in the G.I. tract more often than elswhere. In such cases nutritional deficiency may play an important role in the pathogenesis of the anemia, and in many cases, blood loss is also a contributory factor. Malignent disease of the kidney, breast, prostate, thyroid, and lungs, in particular, may metastasize to the bones, and in such an event *"myleophthisic" anemia* may develop. The picture then may be that of a pancytopenia, or a leukemoid picture may result. The latter is marked by leukocytosis together with a moderate "shift to the left" in the leukocytic formula, and normocytic anemia.

C. *Decreased formation of red blood cells due to deficiency of substances necessary for their production*

Macrocytic anemias are characterized by an increase in the volume (MCV) and weight of hemoglobin (MCH) in the red blood cells. The concentration of the hemoglobin in the red blood cells (MCHC) remains normal. The macrocytic anemias, in general, are of two types:

a) The megaloblastic macrocytic anemias are characterized by the presence of megaloblasts in the bone marrow. In these anemias, of which P.A. is the most common example, the administration of liver extract or vitamin B_{12} relieves the anemia, but in certain macrocytic megaloblastic anemias it is folic acid rather than vitamin B_{12} that relieves the anemia. In practice the most common cause of macrocytic anemia is laboratory error, and this is most often due to errors in red blood cell counting. Vitamin B_{12} and folic acid are valueless in anemias other than those in which the bone marrow is megaloblastic.

b) To be distinguished from the megaloblastic macrocytic anemias are the non-megaloblastic macrocytic anemias. These anemias are usually secondary to other disease and the bone marrow is non-megaloblastic.

These anemias are seen sometimes with hypothyroidism (Myxedema), liver disease, leukemia, lymphoma and some cases of aplastic anemia. Non-megaloblastic macrocytic anemias are also sometimes seen with a number of conditions which ordinarily produce normocytic anemia: acute post-hemorrhagic anemia, hemolytic anemia, and some other normocytic anemias. When there is intense activity of the bone marrow, the macrocytic here depends on the fact that a relatively large number of immature red blood cells (there is reticulocytosis etc.) appear in the circulation in response to hematopoietic stimulations and because in general, immature red blood cells are larger than mature, the anemia will be macrocytic instead of normocytic. Consequently, in conditions which ordinarily produce normocytic anemia, when there is an accompanying very intense activity of the bone marrow with liberation into the circulation of many immature cells, a temporarily macrocytic anemia develops.

The clinical differentiation between megalobastic macrocytic anemia and non-megaloblastic macrcocytic anemia is usually easy.

The clinical differentiation between megaloblastic macrocytic anemia and non-megaloblastic macrocytic anemia is usually

1) *Pernicious anemia*

The anemia is macrocytic with megaloblastic hyperplasia of the bone marrow.
Laboratory findings:

a) *Blood* Macrocytes are characteristically seen, but there is actually a great range in the size of the cells, and in addition, many bizarre-shaped red blood cells are found (poikilocytosis). The M.C.V. is greater than normal and ranges between 100 and 160 m. (The existence of a macrocytic anemia, as indicated by calculation of red blood cell size, should, furthermore, be confirmed by examination of the blood smear). The mean corpuscular hemoglobin contentration is normal. The red blood cells in P.A. and in other macrocytic anemias are not "hypochromic", but, being thicker as well as larger in diameter than normal red blood cells, they appear to be supersaturated with hemoglobin, as one looks at them through a microscope. Some degree of diffuse polychromatophilia as well as basophilic stippling is found, and occasional nucleated red blood cells may be encountered. Reticulocytics are usually within normal limits in untreated patients or, at most, do not run higher than three to four percent.

The leukocyte count is usually lower than normal and there is relative lymphocytosis. The polymorphonuclear neutrophilic leukocytes often show an unusual number of segments and may be exceptionally large. An occasional myelocyte is present in many cases. Sometimes some degree of eosinophilia is encountered. The platelets are generally reduced in number, sometimes to levels below one thousand per cubic millimeter.

The resistance of the red blood cells to hypotomic saline solutions is not significantly altered. In practically all cases the icterus index is elevated (usually between eight and fifteen; sometimes up to twenty-five), the plasma bilirubin is increased (the average bilirubin is 1 mg./100 ml. but sometimes is higher; the Van den Bergh reaction is "indirect").

b) *Other laboratory findings.* With extremely rare exceptions, there is, in P.A., persistent failure to secrete hemoglobin in the stomach even following the injection of histamine.

The urobilinogen content of the urine and stools is increased in practically all cases.

Where anemia is slight in degree, the combination of achlorhydria, slight macrocytosis as indicated by calculation of mean corpuscular volume and by the presence of macrocytes in the blood smear, together with a slight degree of bilirubinemia, makes the case highly likely.

Differential Diagnosis: When the macrocytic anemia is part of another disorder such as "aplastic" anemia, "aleukemic" leukemia, or some type of hemolytic anemia, differentiation is important, for vitamin B_{12} or folic acid are of no value. In aleukemic leukemia, sternal marrow examination should reveal a characteristic picture quite different from that of P.A. and in hemolytic anemia. The marrow is normoblastic, not megaloblastic. Even when the macrocytic anemia is accompanied by megaloblastic bone marrow, differentiation is important, since some forms, unlike P.A., are not permanent in character and do not require treatment for the remainder of patient's life. Certain rare megaloblastic macrocytic anemias, furthermore, do not respond to the administration of refined liver extract or to vitamin B_{12}. Some of these are described below.

It is important that diagnosis be established accurately before treatment is initiated. In doubtful cases, a therapeutic test can be very helpful. It is important, however, that the test be made with vitamin B_{12} alone and not with some agent containing iron or other substances in addition, and that the reticulocyte be observed daily for seven to ten days until a positive or negative result has been obtained.

The cobalt contained in the vitamin B_{12} can be labeled radioactively and the absorption of vitamin B_{12} can be thus measured. This provides a means by which defective absorption of vitamin B_{12} from the G.I.T. can be demonstrated even in the absence of anemia, as in treated cases of P.A., and to some extent megaloblastic anemias other than P.A. can be differentiated from the condition. Several different techniques are available, but the most commonly used one, the *Schilling test*, depends on measurement of the excretion of the administered radioactive material in the urine. When radioactive vitamin B_{12} is given by mouth to persons who can absorb it, radioactivity will appear in the urine if the person is "flooded" with an I.M. injection of nonradioactive vitamin B_{12}. Normal individuals have been found to extrete 7 to 22% of the orally administered radioactivity in the urine in twenty-four hours with average of 14%. Patients with P.A. have been observed to excrete only 0 to 2.3% under these conditions. In them the simultaneous administration of intrinsic factor and radioactive vitamin results in increased excretion from 3.1 to 30%.

2) *Sprue and other malabsorption syndromes* can be accompanied by macrocytic anemia or microcytic hypochromic anemia.

3) *Megaloblastic anemia of infancy.* Is common.

4) *Megaloblastic anemia* with Diphyllobothrium latum.

5) *Pellagra.*

6) *Megaloblastic anemia of pregnancy.*

Iron deficiency anemia

By far the most common cause of such anemia is *chronic* blood loss. *Impaired absorption* of iron is rarely an important factor in the development of iron deficiency anemia, however may be seen, for example in Malabsorption syndromes. Vitamin C favors iron assimilation.

Deficiency of iron in the diet alone is rarely a cause of iron deficiency except in infants receiving a milk diet exclusively, and occasionally in elderly people who have depleted their stores by consuming a diet very low in iron.

In children and adolescents the iron needs for *growth* are very important, and it is largely because of the demands made by the ever-expanding blood volume that infants receiving an unsupplemented diet of milk develop iron deficiency. In older children and adolescents, poverty or faulty habits may contribute to the mounting deficiency by causing consumption of a diet too low in iron to supply the needs.

In adult women, the iron requirement during *pregnancy* and *lactation* are factors which may lead to the development of iron-deficiency anemia.

Blood picture in iron deficiency anemia. The anemia is hypochromic and microcytic, with moderate or no reduction in the number of red blood cells and comparatively more marked reduction in hemoglobin. Anisocytosis, poikilocytosis, and polychromatophilia may be marked. Tiny microyctes, "target-like" cells, elliptic cells, and bizarre poikilocytes are also found, as well as a certain proportion of normally filled red blood cells. Reticulocyte count is low. Only in this type of anemia is a substantially reduced MCHC encountered (less than 30%). This hypochromia is more significant than the microcytosis, although the latter may be extreme (MCV 55 to 75). The red blood cell count may be normal or nearly so, or even greater than normal, while the hemoglobin and the hematocrit are greatly reduced. The leukocyte count is normal or slightly reduced.

The bone marrow is hyperplastic and contains an excessive number of normoblasts.

The only form of anemia of this type which is not extremely rare and which may be mistaken for that due to iron deficiency is Thalassemia. Consequently, the discovery of hypochromic microcytic anemia usually calls for a search for causes of iron deficiency and in particular, requires a thorough search for sources of blood loss.

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Contributors Column

Dr. William J. Holloway, University of Maryland School of Medicine '48, interned at the University Hospital, Baltimore and then came to Delaware Hospital, Wilmington as Medical Resident until 1952. The next two years were spent in the U.S. Army and since then Dr. Holloway has conducted his private practice in Wilmington.

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Dr. Howard D. Cohen, M.D., a graduate of Temple University School of Medicine, interned at Temple University Hospital, had one year of residency in general surgery at Atlantic City Hospital and received an MS. in Otolaryngology after completing a three-year residency in the Department of Otorhinology and the Chevalier Jackson Clinic at Temple University Medical Center.

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Dr. Warren R. Johnson, Yale Medical School '57, has been serving his internship at the Delaware Hospital, Wilmington and is presently in his second year of Pediatric Residency. Dr. Johnson will be Medical Care Resident in Pediatrics at the Johns Hopkins Hospital, Baltimore as of July 1, 1960.

Dr. James T. Metzger, Duke University School of Medicine '45, was general surgical resident at Duke Hospital, then plastic surgical resident, under Dr. Ferris Smith, Grand Rapids, Michigan and in '53 became Associate in plastic surgery at Duke University. Dr, Metzger is on the active staff of all hospitals in Delaware, and consultant in plastic surgery to Alfred I. duPont Institute and the Veterans Administration Hospital.

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Dr. Richard A. Kahlbaugh, chief medical resident at the Delaware Hospital, Wilmington, interned there after his graduation from The George Washington University School of Medicine in 1956.

Elvyn G. Scott, M.T., has been Bacteriologist at the Delaware Hospital since 1936 and is also consultant in bacteriology to the Memorial Hospital, Wilmington. With Dr. W. Robert Bailey of the University of Delaware, Mr. Scott has been co-author of the 6th edition of *Diagnostic Bacteriology*.

In Brief

Unofficial Medical Ambassadors

Medical international relations will get a boost with a $180,000 grant from Smith Kline & French Laboratories which provides scholarships for medical students (eligible after completion of the third year) to work in remote areas of the world. The new program has been announced by the Association of American Medical Colleges. Object: broad clinical experience gained and a knowledge of preventive medicine as practiced abroad. In exchange, the selected Fellow will communicate the most recent medical knowledge of the United States to foreign regions. Medical students must submit applications to the Dean of their medical school.

New Medical Society Officers

Dr. Andrew M. Gehret was named president-elect of the New Castle County Medical Society; Dr. Allen D. King becomes president succeeding Dr. H. T. McGuire; Dr. Frank A. Jones, vice-president; Dr. Harry J. Repman, secretary; Dr. John W. Alden, treasurer and Dr. G. William Martin, Jr., councillor.

Retirement Not an End

Four Wilmingtonians — George S. Long, I. B. Finklestein, Raymond W. Heim and Frederick S. Johnson — retired from careers in business and education — are now devoting their time to a mutual interest of long standing as active members of the board of directors of the Delaware Anti-Tuberculosis Society. All four men are using the vast amount of experience each has accumulated over the years to serve mankind.

Noted

A free vision-spinal-posture screening clinic for school children was held recently in Hockessesn, Delaware. The clinic was sponsored by the Friendship and Liberty Lodges, under the supervision of S. H. Ufberg, chiropractor, and J. D. Paul, optometrist.

New Totals for Blue Shield

An all time high enrollment gain for the first nine months of 1959 is reported by the National Association of Blue Shield Plans. Total membership represents nearly 24% of the United States population; total payments to doctors in behalf of members represents 90% of the total income of all plans for the same period. This points up the extent to which Blue Shield is helping to pay the nation's yearly doctor bills and reflects the continued acceptance by the public of the medical-surgical program offered.

School of Nursing Accredited

St. Francis Hospital School of Nursing has been granted full accreditation by the National League for Nursing, which makes it one of 430 schools of the nation's 1,118 professional schools of nursing to have this status. This process involves application and a seven day inspection of the School by a League team. Dr. Willard Preston is chairman of the school's advisory board.

Take Yo' Pick

According to figures from the Health Insurance Institute, based on a national survey, hospital rates for two-bed semi-private rooms in cities of more than 100,000 population range from a high of $27.80 a day in Oakland, California to a low of $9.29 a day in Montgomery, Alabama. Wilmington, Delaware falls in the middle with $18.62 as an average daily rate — Philadelphia averages $16.48 and New York City, $20.93.

Salk Vaccine Proves Itself

Figures released by Dr. Anthony F. Vitiello, Chairman of the Wilmington Board of Health, show a decline of polio cases in the city from 16 in 1958 to only two in the last year. The state-wide polio record, also showing a considerable drop for 1959, shows that Delaware is one of the few states with a decrease in polio cases. Some credit goes to the inoculation program launched by the Medical Society of Delaware. Persons who have not yet received the fourth booster shots are again urged to do so.

Valuable Service Thrives — (Unfortunately)

The Delaware Poison Information Service, organized by Elmer Fantazier, M.D., Mark Kenyon, Ph.D. and the late Mr. Robert Cathcart, has, in the last fourteen months of service to the public, answered 1,460 telephone calls concerning poisoned individuals and has treated 601 persons at the Poison Center for accidental poisoning. Headquarters are located in the Delaware Hospital; telephone OL 5-3389.

Medical Education the Hard Way

The Association of American Medical Colleges reports that one-third of the medical students in the 1959 graduating class had financial liabilities greater than their total assets. Borrowing was necessary for completion of their medical education.

Services Available

Information on how to obtain the results of research and development in the USSR and other Soviet orbit countries, in the fields of science, technology and medicine are available now by writing the Pergamon Institute, 1404 New York Avenue, N.W., Washington 5, D. C., Executive Director, I. R. Maxwell.

Birth Control Explosion

Birth control as an official policy financed by public funds is becoming a universal question. The experts claim that by the year 2000 the world population will reach 7 billion. Many governments are instituting government-supervised programs to disseminate birth control information; India for one, Japan (where abortion was legalized in in 1958), Pakistan, Ceylon, Malay, Hong Kong and the United Arab Republic. Behind the iron curtain, Poland and Russia are giving attention to population control. In America, the Methodist, United Lutheran,Evangelical Lutheran, Congressional Christian, and Protestant Episcopal churches plus the Central Conference of American Rabbis, have given encouragement to the control of parenthood and the freedom to convey such information as a safe-guard to the well-being of the family and society. Indications now are that the use of public funds to promote birth control could have domestic as well as international repercussions and could even become an issue in the 1960 presidential campaign.

The Deborah Symposium

A forthcoming heart symposium, open to all interested physicians, has been announced by Deborah Hospital, Browns Mills, New Jersey. Congenital heart disease will be the subject of the hospital's second International Symposium to be held April 28-30 in the Bellevue-Stratford Hotel, Philadelphia. There is no registration fee. Deborah Hospital is free, non-sectarian and was established 38 years ago as a tuberculosis institution, expanding its interests in recent years to include the treatment of chest diseases, with emphasis on heart surgery.

Scientists of Tomorrow

Clemson College, S.C., will be host to the second JESSI (Junior Engineers and Scientists Summer Institute) session from June 12-25, 1960. This two-week program is designed to remove the *Guess* from school and college career decisions by giving the student an academic insight into the opportunities open in science and engineering fields. Eligible are boys completing grades 10 and 11 by June who have credits for three to four courses of high school math and/or science. Write: Scientists of Tomorrow, 114 Sylvan Bldg., Portland, Oregon.

The Stress . . . .

According to two physician-biochemists at the National Heart Institute, Bethesda, Maryland, a potent fat-mobilizing pattern or hormone activity has been found in dog experiments which points to stress-induced overactivity of the adrenal glands as producing excessive amounts of cholesterol in the blood. The dog studies are now being extended to volunteers at National Institutes of Health to learn whether the pattern "stress hormones" that raised the blood lipids of dogs has a similar effect on man.

. . . And the Strain.

Experiments conducted at the Army's Walter Reed Hospital show that the strain of responsibility is linked to shorter life. This may explain why physicians, constantly responsible for life, generally have shorter than average life spans.

In monkeys subjected to six hours of strain and then six hours of relaxation, an increase in stomach acidity, believed to be associated with ulcers, occurred during the periods of relaxation rather than stress. Another series of experiments with the same monkeys showed no excess of acidity when the strain was continuous during their waking hours. A possible conclusion is that if a person must worry and tie himself into emotional knots, he should worry all the time rather than alternating between periods of strain and relaxation!

Have You Noticed?

"Men walk from the knee, while women walk from the hip. Men strike matches towards themselves, while women strike away. Men dress to look like other men while women dress to look unique within the current fashion. Men look at their fingernails by cupping their palms and bending their fingers towards themselves while women look at their nails by straightening their fingers palms outward. Men spit flecks of tobacco off their tongues; women pick them off. Men nag their wives for what they do. Women nag their husbands for what they don't do."—according to Dr. Kenneth M. Colby (*A Skeptical Psychoanalyst,* Ronald Press, N. Y.)

Editorials

HERRMAN L. BLUMGART

His many friends in Delaware will join us in sending our congratulations and best wishes to Doctor Blumgart in whose honor a Professorship of Medicine at the Harvard Medical School has been named. Professor at his alma mater, director of the Medical Department at Boston's Beth Israel Hospital, and Editor-in-Chief of *Circulation* are but a few of his accomplishments. His service during World War II not only was a direct stimulus toward providing better patient care to many soldiers but served as and inspiration to the hundreds of medical officers who were fortunate enough to be associated with him. This recent honor is most fitting and deserved.

MEDICAL WRITING:

The current prize contest for an essay on a medical subject by an intern or resident that is being sponsored by the Delaware Valley Chapter of the American Medical Writers Association should be a stimulus for the young physician who says that he cannot write. As has been mentioned repeatedly in these columns, a physician should be able to write. Here is an excellent opportunity for the young trainee to gain valuable experience; perhaps win a cash award. All papers will be reviewed by a group of judges who are chosen for their literary or editorial experience. Merely submitting a manuscript and having it criticized by this panel should be ample compensation for the physician who desires to improve his writing ability.

Doctor John H. Talbott, Editor of the Journal of the American Medical Association, has discussed medical writing in the current (January 23) issue of that journal. He repeats a lesson taught for years by Dean George Meeker of the University of Pennsylvania Graduate School of Medicine —we must struggle through revision after revision, draft after draft, before our composition begins to be presentable. Dean Meeker added a further suggestion—when you think that your paper is completed and in good form, put it away for several months. When you then take it out and read it, you frequently will wonder who in the world wrote such trash.

Despite the general acceptance of the fact that no one can write a good paper in a single draft, it is interesting to note how many papers reach the editorial office fresh from the transcribing tape and the stenographer's typewriter, never having reached the desk of the author.

Doctor Talbott's editorial was stimulated by the publication of a book on "style." We would be foolish indeed not to agree that the book he mentions is excellent and that proper style is indeed desirable. From our limited viewpoint, however, the average physician who is considering writing a paper is more in need of a book aimed at his specific problem. There are many such books but one recently published having all the virtues of the old standbys plus a few of its own is "*The Preparation of Medical Literature*" by Louise Montgomery Cross. If a single book is to be recommended, this is our choice.

LEGAL MANSLAUGHTER:

In a recent (January 21) editorial in the New England Journal of Medicine, the subject of the police chase of stolen cars at dangerous speeds was again discussed. It previously had been editorialized on May 22, 1958 and the editor appeared to be pleased by the action stimulated by his editorial.

In this column for September, 1959 under the title *Five Minutes or Eternity* a plea was made to cut down on the dangerous speed of ambulances and to attempt, by persuasion, to stop their practice of running red lights. We are realistic enough to expect no reply to our small cry; more important, and discouraging, no one seems to care.

Auxiliary Affairs

● The story of a selfless adventure that served a great need—Dr. and Mrs. Daniel Preston in Uganda, Africa.

Doctors' wives often lead very lonely lives as their husbands fulfill the demands of a most time-consuming profession, but, usually they feel compensated by the need and importance of what their husbands do. And once in a while, they get to share in a wondrous adventure.

One of these is Amy Preston, wife of Doctor Dan and a registered nurse as well, who insists that it's against her religion to fly — *"I'm a very devout Coward,"* she says. *But!*

In the afternoon on July 31st, Dr. and Mrs. Preston left Idlewild Airport by TWA bound for Entebbe, Uganda, Africa, with stops at Lisbon, Madrid, Algiers, Tunis, Rome, Athens, Cairo, and Khartoum in the Sudan. They finally arrived at their destination at 11:30 p.m. on the ninth of August. That's quite a bit of flying for a self-styled coward.

And why Uganda, Africa? Last January Dr. and Mrs. Preston met the Assistant Bishop of Uganda, Keith Russell, when he visited here in Wilmington and spoke at the Cathedral Church of St. John. When they were all dinner guests of Dean and Mrs. Lloyd E. Gressle of St. John's, Dr. Preston posed a doctor's typical first question, "What is your medical set-up, Bishop Russell — do you have a surgeon?"

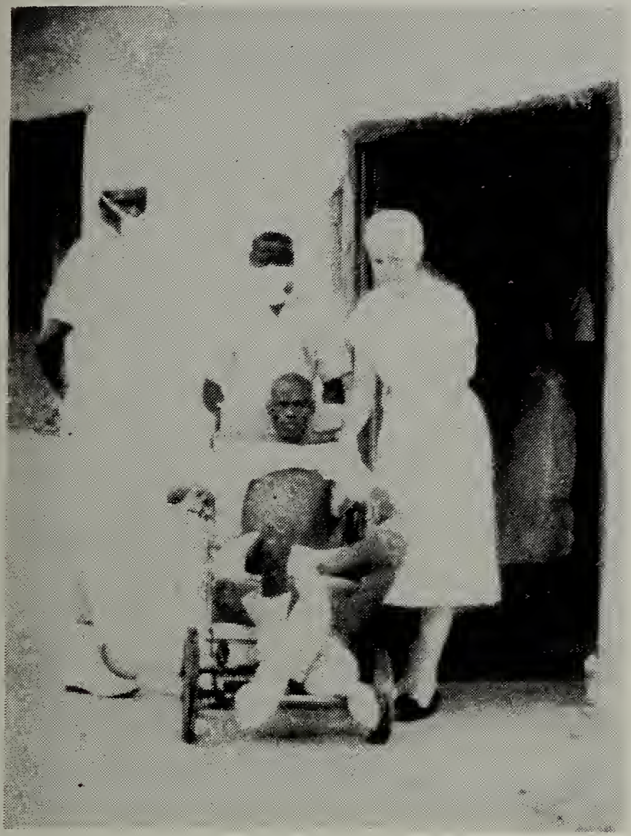
Well, at the little Freda Karr Hospital, and Anglican Mission Hospital in Ngora, Uganda, there are two general practioners and no surgeon, and this is where Dr. and Mrs. Preston went to serve a great need for almost two months.

Their trip was an exciting adventure, sightseeing in cities Mrs. Preston had not visited before — Lisbon, Athens and Cairo — but their experience living and working in Africa among the Ateso tribe which lives in Ngora, an area of Uganda which covers about 250 sq. mi., was the real highlight.

While in Ngora, they lived with Dr. Paul Sparks, a batchelor and one of the two doctors at the hospital. The home Dr. Sparks shared with them was a modest stucco house with tin roof and somewhat primitive facilities. Their needs were served by two natives, Erridati, the cook, and Sam Weirry, a houseboy.

The days were busy for the Prestons. They were awakened each morning at 6:30 A.M. by the sound of the iron gong, calling the hospital workers to their jobs. The staff included the two physicians, Dr. Sparks and Dr. Wright; the director, Mr. Neal Stedman; a dentist, Dr. Knight; Canon Prentice; two English registered nurses; and two native registered nurses who had been trained at the hospital in Kampala, the capital of Uganda.

Amy Preston supervises two native aides—an operating room assistant and a ward dresser—in handling an eighteen year old patient in a wheel chair.



Mrs. Preston standing in front of one of the thatched buildings with the Bishop of Uganda, Stephan Tomasange.

In the course of days at the hospital, where 150 to 160 people would come to the clinic every Monday, Wednesday and almost as many when it was not open, Dr. Preston performed operations of almost every kind: fractures, fibroids, ovarian cysts, removal of tubes, breast abscesses, ceasarians — even a cataract removal with instruments given to him for the hospital by Dr. Norman Cutler.

Mrs. Preston scrubbed with Dr. Dan, as they soon realized that difference in terminology hampered communication with the English-trained nurses. Their greatest handicap, however, was the scarcity of sterile drapes, towels and cloths. The primitive washing by hand, limited materials, and small sterilizing drums, prevented a greater number of operations. Their work was complicated, too, by the fact that almost every native who came into the hospital suffered also with malaria, hookworm, and/or various skin diseases.

All was not work for the Prestons during their African stay. On the 31st of August, they set out on a Safari, stopping overnight with Bishop Russell in Gulu, then 50 miles on to Murchison Falls where they stayed at the beautiful Paraa Safari Lodge on the bank of the Nile in an apartment built last year especially for the Queen Mother of England. They spent one morning cruising on the Nile where they saw hippopotamuses, rhinoceroses, crocodiles, water buffalo, a leopard, baboons and monkeys. They traveled overland in a little Hillman Minx which they procured through their travel agency. Automobile travel was limited to short distances and only in the daytime by the primitive roads and the proximity of wild animals.

Dr. and Mrs. Preston returned to the States at the end of September. The stories of their adventures on their trip are fresh and exciting. Be sure to ask them when you see them.

MAJOR MEDICAL MEETINGS IN DELAWARE

Standing Schedule

Beebe Hospital	General Staff	2nd Friday	Monthly
Delaware Hospital	General Staff	2nd Tuesday	Feb., May, Sept., Dec.
Kent General Hospital	General Staff	3rd Tuesday	Monthly
Memorial Hospital (Wilmington)	General Staff	2nd Tuesday	Jan., March, June, Oct.
Milford Memorial Hospital	General Staff	2nd and last Tuesdays	Monthly
Nanticoke Memorial Hospital	General Staff	1st Thursday	Monthly
St. Francis Hospital	General Staff	4th Tuesday 1st Tuesday	March, May, Oct. December
Wilmington General Hospital	General Staff	4th Tuesday	Jan., April, Sept., Nov.

Kent County Medical Society	Monthly Meeting	3rd Tuesday	September - June
New Castle County Medical Society	Monthly Meeting	3rd Tuesday	September - June
Sussex County Medical Society	Monthly Meeting	2nd Thursday	September - June

Delaware Academy of General Practice	Monthly Meeting	1st Tuesday	September - June
Delaware Pathology Society	Weekly Meeting	Each Friday	

Special Schedule

Medical Society of Delaware and The Royal Society of Medicine	Trans-Atlantic Clinico -Pathological Conference	Delaware Academy of Medicine	April 20, 1960
Medical Society of Delaware	Annual Meeting	Rehoboth, Delaware	September 8, 9, 10, 196

LECTURE COURSE

Subject: Basic Electrocardiography

Schedule: Part I

Time — Every Thursday afternoon 4-5 p.m.
Dates: From October 29, 1959 through February 25, 1960

Place: Memorial Hospital, Wilmington

Schedule: Part II

Time — Same as for Part I
Dates: March 3rd through March 31st, 1960
Arrangements must be made for Part II only.

For full details regarding this series write to the Director of Medical Education, Memorial Hospital, Wilmington

TWO-WAY RADIO CONFERENCES FOR THE COMING MONTH

Sponsorship: *Medical Society of Delaware, Pennsylvania Hospital, Smith Kline & French Laboratories.*

Date	*Topic and Faculty*
Feb. 23	—"Cardiac Lesions Amenable to Surgery." Julian Johnson, M.D., Prof. Surgery, University of Pennsylvania School of Medicine.
Mar. 1	—"Common Orthopedic Problems of Children," Jesse T. Nicholson, M.D., Orthopedic Surgeon to Pennsylvania Hospital.
Mar. 8	—"Comparison of BMR, PBI, I^{131} and Cholesterol," George R. Fisher, III, M.D.
Mar. 15	—"Mechanism, Etiology and Management of Dysmenorrhea," Craig W. Muckle, M.D., Assoc. Obstetrician and Gynecologist, Penna. Hospital.
Mar. 22	—"Laboratory Workup of the Patient with Anemia," Edward H. McGehee, M.D.

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THE MANAGEMENT OF URINARY TRACT INFECTIONS

● **The author comments upon various therapeutic preparations for the therapy of specific infections of the urinary tract.**

Arthur Ullman, M.D.*

The proper treatment of urinary tract infections begins with an attempt to determine the basic cause of the infection. A knowledge of the mechanisms involved is therefore fundamental.

In a normal urinary tract, bacteria are found for about one centimeter within the urethral meatus in both sexes. It is believed that the potent antibacterial action present in the urinary system, proximal to the meatus, is peculiar to the epithelial cells lining the tract or perhaps to substances in the urine, or possibly both acting together. If bacteria are introduced into a normal urinary tract, they will be spontaneously eradicated within several days. Persistence of infection is due to an upset in the normal protective forces. The most frequent cause is urinary stasis, due to obstruction of the normal flow or paralysis of the detrusor muscle. The antibacterial powers of the urinary tract will reappear after the persistent infection has been eradicated by the permanent removal of the obstruction. In stasis due to paralysis, infection will disappear only if and when the muscle can resume its normal function.[11]

The Various Path Ways

Intelligent therapy requires a consideration of the various pathways by which bacteria reach the interior of the urinary tract. The most frequently described routes of spread are hematogenous, lymphogenous, or by foreign objects inserted into the urethra. Those which occur in decreasing frequency are: through wounds in the urinary tract; by direct extension from other organs; by surface extension from the exterior along the mucosal surface of the urethra, and through congenital or neoplastic abnormal openings.[3,11]

The initial step in evaluation of the infection is the examination of a properly obtained specimen. In a male the glans is cleansed and a mid-stream specimen collected. In a female, only a catheterized specimen is valid. One first determines if an infection is actually present, and if it is an uncomplicated infection or one secondary to some coexisting lesion. Secondary lesions include obstruction, calculus, tumor or cicatrix formation. If such a lesion exists, it must be removed since therapy will be ineffective in its presence.[3,11,13] The collected urine is centrifuged and the sediment examined. The presence of pus cells per se is not conclusive evidence of infection, for pus may be present from drug or chemical irritation, such as turpentine. Infection without pus characterizes an apyuric bacteriuria.[11]

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*Chief of Surgery, Veterans Administration Hospital, Wilmington, Delaware.

The organisms are demonstrated with Gram stain as well as by culture. In the absence of organisms viral infection is suspect. Two or three courses of unsuccessful therapy indicate the need for a more complete diagnostic study, including excretory urography and, if necessary, functional studies and retrograde pyelography. An estimate of renal function and morphology can be demonstrated by excretory urography. Cystoscopy often reveals neoplasms or calculi masked by infection.[10,13]

Common Microorganisms

The microorganisms usually found in urinary tract infections are Gram negative bacilli (75 percent of infections), and Gram positive cocci (25 percent).[33]

Escherichia coli is the most commonly occurring Gram negative organism. Closely related organisms, Aerobacter aerogenes account for only about 10 to 15% of the cases of bacillary infections. Other bacilli found are Proteus, Pseudomonas, Salmonella, Shigella and Alcaligenes. Pathogenic and non-pathogenic organisms of the Genus Micrococcus are found in urinary infections. Certain of the non-pathogens occur as normal inhabitants, such as Sarcina lutea. Most pathogens belong to the species Micrococcus pyogenes-aureus and albus whose infections, as with the streptococci, may be blood borne and secondary at times to foci elsewhere in the body. The hemolytic and green producing streptococci occur in less than 5 percent of urinary tract infections. Streptococcus faecalis is usually a rare secondary invader, unless preceded by instrumentation or a surgical procedure.[3,10]

No discussion of tuberculosis, gonococcal or unusual infections of the urinary tract will be presented in this paper.

Single organisms are found in 80 to 100 percent of acute infections; multiple organisms in about 8 percent. It is important in mixed infections to differentiate the causative agent from contaminants. If there is a doubt, a repeat urinalysis should be done. A true bacilluria is present with bacterial counts of 10^5 or more per cubic centimeter of urine, while smaller counts are probably a result of contamination.[22] When a bacteriostatic agent has been administered previously in acute pyelonephritis, counts may fall below 10^5. If diuresis is good and drainage adequate few bacteria are discharged from the kidney, and stasis in the bladder does not occur.

The pH of the urine in conjunction with bacteriocidal and bacteriostatic agents is important, since it limits the degree of bacterial multiplication. Bacteriostasis occurs when pH values are below 5.0 or above 8.5. Dilution effects become noticeable at a specific gravity of 1.003 or less in an acid medium.[22]

The effectiveness of therapy depends upon a satisfactory urinary output, relief of obstruction, the sensitivity of the pathogens to the therapeutic agents, the effective concentration of the drug at the bacterial site and the degree of chronicity of the infection.

Early Specific Treatments

One of the earliest specific treatments for cocci infection was the intravenous administration of neoarsphenamine. In 1932 the ketogenic diet employed beta hydroxybutyric acid as a bacteriocidal agent. The following year a specific bacteriophage received a trial with little success. Approximately 20 years ago the use of mandelic acid and methenamine mandelate was instituted. Their effectiveness depends upon the maintenance of urinary drug concentrations of 0.5 percent to 1.0 percent at pH values below 5.5.[1] They are easily administered, show a relative lack of toxicity, and suppress bacteria for prolonged periods in chronic infections, although without cure still without the emergence of resistant variants of pathogens.[1,4] Hematuria and gastrointestinal disturbances are manifestations of excessive dosage. The prescribed daily dosage is 12 grams of mandelic acid or 6 grams of methenamine mandelate. It is difficult to achieve good results in patients with impaired renal function in the presence of urea-splitting bacteria. Notwithstanding the relative lack of effectiveness of these two drugs at body pH, the eradication of urinary tract infections is possible.

Sulfonamides

Shortly after the azo sulfonamides were introduced in 1935 their clinical application in urinary tract infections proved valuable. The development of derivatives as well as mixtures of two or more of the derivatives have enhanced their effectiveness.[1] The factors which determined the choice of the sulfonamides are the rate of absorption, distribution in body fluids, acetylation, and over-all toxicity.

Gantrisin

Gantrisin is the drug of choice in the treatment of Proteus infections. It is also effective against Escherichia coli and Alcaligenes, but only moderately so against Aerobacter and paracolon bacillus.

Therapeutic level is obtained without the production of any local or systemic reaction by a dose of 2.0 grams every 6 hours. The concomittant use of alkali or forced fluids is unnecessary.

With so many sulfonamide preparations now available it seems wise for the clinician to choose one of the more commonly employed drugs with a long and clearly proven history of clinical usefulness and effectiveness. A sulfonamide or combination of sulfonamides should be tried first in infections of the urinary tract. Their effectiveness is 75-90 percent in uncomplicated infections and 17-55 percent in complicated infections.[1-5,8,10,14,24,25,28,32]

Penicillin

Penicillin is useful in the treatment of urinary tract infections caused by streptococci, staphylococci and other Gram positive organisms. In combination with the sulfonamides it has been successful in the treatment of mixed infections caused by both Gram positive and Gram negative organisms. The sensitivity of staphylococci to penicillin has decreased steadily as the use of the drug continues, and the incidence of susceptible strains is now about 25 percent. However, the penicillin resistant strains are found largely in hospitals. Patients without recent hospitalization or recent administration of penicillin usually harbor sensitive staphylococci. Enterococcal infections usually occur in association with other bacteria. Their presence is frequently a consequence of instrumentation of the urinary tract. Although penicillin has been of value in the treatment of many enterococcal infections, bacteriologic control is generally difficult. Some enterococci are killed more rapidly by optimal concentrations of penicillin than by does in excess of the optimal concentration.[12,15,17,33] The therapeutic dose is 300,000 units of procaine penicillin every 12 to 24 hours. Considerably higher amounts, 600,000 to 1,000,000 units every 12 to 24 hours, are recommended in severe cases. In mixed bacillary and coccal infections combination therapy with sulfonamides, streptomycin or other antibiotics is advisable.

Streptomycin

The majority of urinary tract infections caused by Gram negative bacteria are sensitive to streptomycin. However, the drug has toxic properties and organisms rapidly develop a resistance to it. This precludes its widespread and prolonged use.[21,22,32,33]

The capacity of streptomycin to induce resistance is probably greater than any other commonly used antibiotic. The drug should be used no longer than 5 to 7 days. The dosage is 1.0 to 2.0 grams per day. It is advisable to alkalinize the urine during streptomycin therapy. Oral administration of sodium bicarbonate or sodium or potassium citrate in doses of 2.0 grams every 4 hours is satisfactory.[23] Bacteriologic control of acute infections of the urinary tract is 60 to 80 percent effective with streptomycin.[21,22]

Cyclines

The relatively great effectiveness of all the drugs in the group of Cyclines and the ease of administration has led to their widespread use. Chlortetracycline is probably the most active of the tetracycline group of antibiotics against susceptible bacteria but Proteus and Pseudomonas strains tend to be resistant. A satisfactory response is achieved in acute as well as chronic infections, and in those infections which fail to respond to other forms of therapy. This cycline is active against Gram positive and Gram negative forms. It is relatively nontoxic and does not often give rise to resistant variants. The activity is enhanced in an acid menstruum. The dose is at least 25 milligrams per kilogram orally every 24 hours, divided into four equal doses, or 500 milligrams every 6 hours for the average adult.[27,33]

Oxytetracycline which has greater effectiveness against Pseudomonas aerugenosa than others in the group is also of value in the therapy of infections due to Escherichia coli, Aerobacter aerogenes, Alcaligenes sp., Streptococcus faecalis and Staphylococcus aureus.

Tetracycline is especially active against Escherichia coli, Aerobacter aerogenes, Staphylococci and Enterococci.[3,22,33] The chief difficulty with the cyclines is their tedency to induce gastrointestinal and muco-cutaneous disturbances.

Chloramphenicol

Chloramphenicol, the first broad spectrum antibiotic to be reported in the literature, is of particular value in infections caused by the colon-aerogenes group. The dosage is essentially the same as with the cyclines, 250 to 500 milligrams four times a day for 5 to 7 days.[7,20,33]

Nitrofurantoin

Nitrofurantoin, although not an antibiotic, is effective in clearing 75 to 80 percent of acute urinary infections, but only a small percentage of chronic complicated infections. It is particularly effective against Escherichia coli, Aerobacter aerogenes, Proteus rettgeri, and Proteus morgagni. The most resistant strains encountered in one study were Micrococcus pyogenes var. aureus, Proteus vulgaris and Proteus mirabilis. Reports of its therapeutic effectiveness vary from a 50 percent to a 90 percent control of Proteus vulgaris.[6,9,19,29,31] Nitrofurantoin is taken with meals in doses of 200 to 400 milligrams per day. Gastrointestinal reactions are present in about 25 percent of the patients.

Erythromycin

Erythromycin has an antibacterial spectrum similar to that of penicillin. Its major use in the treatment of urinary tract infections is in Staphylococcal or Enterococcal infections in those individuals sensitive to penicillin. Resistance occurs but it can be delayed by combining with other drugs.[10] Toxicity is low and is limited to the gastrointestinal tract.

Carbomycin

Carbomycin, with a similar range in activity to erythromycin is effective against Gram positive organisms, especially against Streptococcus faecalis. Its toxicity is low but in some patients it may enhance the growth of Gram negative organisms.[30,33]

Bacitracin

Bacitracin is ineffective against all renal pathogens except the Staphylococcus. Its renal toxicity limits its use to instances where other drugs are ineffective.[16,33]

Neomycin

Neomycin is highly nephrotoxic and is recommended for urinary tract infection only in the most desperate situations.[32,33]

SUMMARY

The urinary tract remains sterile throughout life in a normal healthy individual. Proper evaluation of history and associated pathological entity is of prime importance for proper therapy. The peculiar characteristics of each specific infection must be known and treatment with therapeutic preparations planned for each individual patient.

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DELAWARE REQUIREMENTS FOR PHYSICAL THERAPISTS

To represent yourself in Delaware as being registered as a physical therapist or to use in connection with your name words, letters, or insignia implying that you are a registered physical therapist you must:

1. Apply to the Board
2. Pay a fee of $15
3. Have been graduated from a school of physical therapy approved at the time of your graduation by the appropriate subcommittee of the American Medical Association or if prior to 1936 by the American Physical Therapy Association
4. Pass an examination or be licensed or certified in another state, territory or foreign country with standards determined by the Board to be as high as those of Delaware and according a similar privilege.

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302 Waverly Road, Wilmington 3, Delaware

INTRAPERITONEAL BLEEDING DUE TO ANTICOAGULANT THERAPY FOR MYOCARDIAL INFARCTION SIMULATING ACUTE SURGICAL ABDOMEN*

● This article reviews the literature on bleeding due to anticoagulants, particularly in the treatment of myocardial infarction, and stresses the need for educating patients in the hazards of anticoagulant therapy. In analyzing two cases which simulated acute surgical abdomen, the author concludes that this complication, though not rare, is infrequently reported.

TWO CASES

Marvin L. Bobb, M.D.**

Anticoagulant therapy is almost universally accepted at the present time in the treatment of certain cases of myocardial infarction. Most authors acknowledge the need for careful control because of the risk of hemorrhagic complications. In 1954 Wright and his group published a monumental survey of 1031 cases of myocardial infarction treated with anticoagulants. They stressed that there existed certain basic conditions which constitute contraindications to anticoagulant therapy. These are: (1) Prothrombin deficiency secondary to vitamin K deficiency, or to severe hepatic disease, (2) Vitamin C deficiency, (3) Renal Insufficiency, (4) Blood Dyscrasias with impairment of normal clotting mechanisms, (5) Various surgical procedures such as operations on the brain and spinal cord; recent operations leaving denuded surfaces; post-operative drainage of wounds or viscera; operations performed in the presence of obstructive jaundice or severe liver damage, ulcerations and open wounds, (6) Extreme hypertension, (7) Subacute Bacterial Endocarditis, (8) Dissecting Aortic Aneurysm, (9) Psychosis or character disturbance. They also listed clinical conditions which may produce hypothrombinemia. They also pointed out that lumbar sympathetic blocks are potentially dangerous in patients under anticoagulant therapy in the treatment of thrombophlebitis and phlebothrombosis. However, they made very clear that the so-called contraindications actually are only such in a relative sense, and that often anticoagulants may be administered when indicated in the face of these conditions provided that the treatment is carried out with meticulous care. Anticoagulants are not, for instance, contraindicated in pregnancy although they should be used with considerable caution for obvious reasons. They recognized that bleeding does occur during the course of anticoagulant therapy in the absence of major contraindications. Of course the major cause is excessive prolongation of prothrombin time by administration of dicumarol and related drugs, or also of the clotting time of the whole blood by the administrations of heparin. Bleeding occurs occasionally when the prothrombin or the clotting time is well within the normal range.

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Identifying Bleeding Episode

The criterion for identifying an episode of bleeding laid down by Wright's group is one which has been diagnosed clinically. Hematuria, for instance, of less than 15 red cells per high-powered field, is considered inconsequential. These authors found 9.2 episodes per hundred cases of bleeding definitely due to anticoagulants in this order of frequency: (1) Hematuria, (2) Hematemesis, (3) Melena, (4) Epistaxis, (5) Hemoptysis. (6) Other. It is clear that the patients in this series were followed very closely and had excellent care. The total incidence of bleeding which they reported is probably lower than usually occurs when patients are treated in other hospitals, outpatient departments and in private practice. We must remember however that not all bleeding episodes prove serious.

In the above 1031 cases "other" types of bleeding during anticoagulant therapy consisted of only five episodes, in which two patients exhibited pathological lesions from which the bleeding occurred. In the three remaining cases the authors did not state exactly where the bleeding occurred; however in autopsied cases they did list hemopericardium and hemorrhage around coronary vessels, which was not sigificantly greater in the anticoagulated than in the control group.

In the two cases reported in this article it was felt that bleeding occurred mainly into the peritoneal cavity. A review of the more recent literature on anticoagulat therapy failed to disclose a single report of intraperitoneal bleeding without preexisting pathology as the chief manifestation of hemorrhage from anticoagulant therapy. However it may be assumed that this complication is not so rare but either is unrecognized and spontaneously corrects itself or that many cases have not been reported. It would seem wise for physicians to become more aware of this possibility.

CASE REPORTS

Case 1.

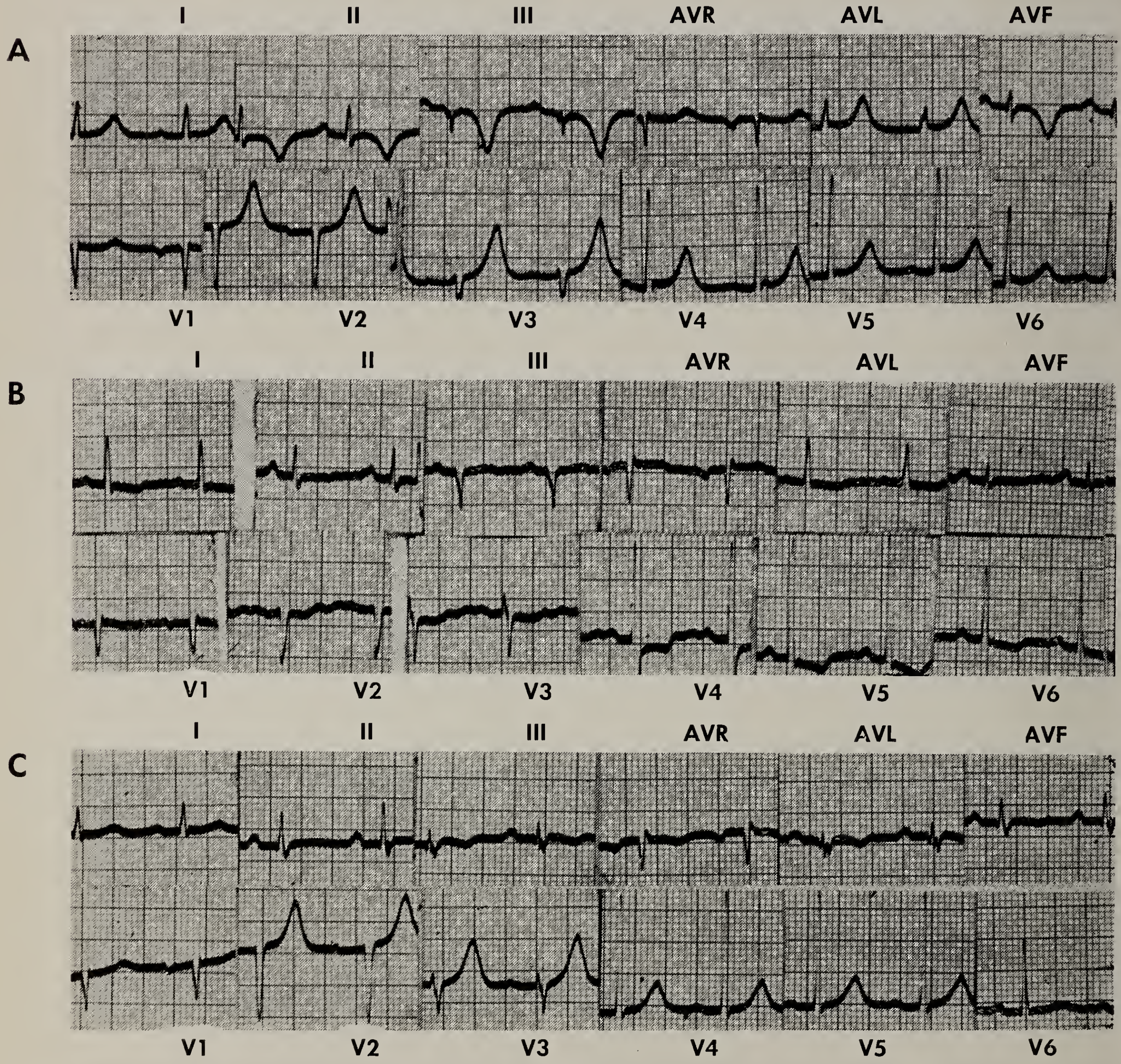
A 44 year old white man had been hospitalized at the Veterans Administration Hospital at Wilmington, Delaware from July 30 to September 19, 1959 because of a single attack of choking substernal pain four days before admission. This had lasted two and one half hours. There had been some radiation to the left arm. Serial electrocardiograms had showed deep T-wave inversions over the posterior surface of the left ventricle, compatible with a non-transmural myocardial infarction (figure 1A). He had been treated with bed rest and dicumarol. He had made an uneventful recovery. There had been neither fever nor leukocytosis. Laboratory studies had been mostly within normal limits including BSP, stools for occult blood, and S.G.O.T. However the sedimentation rate had been 40 mm. per hour. Total proteins had been 7.5 with A/G ratio of 0.92.

On December 3, 1959 he suddenly became ill with nausea, abdominal pain and vomiting of dark liquid which was also passed by rectum. Three days later he was readmitted to the hospital with an acute abdominal picture. Physical examination revealed T 100.0(o), P124 and BP 92/70. The abdomen showed board-like rigidity, absent bowel sounds and marked tenderness. Red blood was present on rectal examination. The skin was clear of petechiae. An electrocardiogram showed coronary insufficiency (figure 1B). There was a leukocytosis of 13,650 with 91 percent polys. The urine was loaded with RBC's. He continued to vomit and went into shock despite supportive measures. At this point a prothrombin determination failed to clot in one hour. The prompt intravenous administration of vitamin K_1 oxide, protamine sulfate and whole blood rapidly reversed the clinical picture. The prothrombin time rose to 100 percent in a few hours.

The next day a peritoneal tap, done by Dr. E .K. Mehne of the surgical service, revealed thick dirt, semi-liquid blood which failed to clot in the syringe. Another ECG (figure 1C) showed considerable improvement.

Reexamination of the patient four weeks later revealed weakness and muscle atrophy in all extremities with hyperactive reflexes and positive Hoffman's sign in the upper extremity. These findings may be due to an intrinsic neurologic lesion although previous intracerebral hemorrhage cannot be excluded. Hematologic work-up failed to

FIGURE 1 ECG'S ON CASE I



A. Chronic stage of non-transmural posterior myocardial infarction. Aug. 21, 1959 shows deeply inverted T waves in II, III and in AVF. The QT interval appears to be prolonged for the rate, but there is probably fusion of the T with a discordant U wave.

B. Coronary insufficiency. On Dec. 5, 1959 — during the bleeding episode. ST segment inversion and a prominent upright U wave are present in V4.

C. Patient assymptomatic — Dec. 29, 1959. Improvement in T wave pattern.

disclose ay obvious cause for bleeding other than anticoagulants. A battery of liver function tests were normal.

Case 2.

A 63-year-old white man—a leather worker admitted to the Wilmington General Hospital on March 27, 1959 because of abdominal pain which had started three days prior to admission and which had localized for a while in the right lower quadrant. On the day before admission he had become nauseated and vomited coffee ground material. There had been no spontaneous bowel movements for several days. He had taken an enema on the day before admission and noted some red blood in the rectum. There had been no dysuria or hematuria. He had been told that he had a coronary occlusion several months before and since then had been on dicumarol therapy. The prothrombin time had been checked occasionally. Physical examination showed BP 150/90, temperature 97.0(o), respirations 20 per minute, pulse 100 and regular. Positive findings were limited to the abdomen which was distended. Peristalsis was absent. There was generalized tenderness, but no rebound.

Rectal examination revealed scanty red blood. The prostate was slightly tender and slightly enlarged. The afternoon of the same day pettechiae were noted over the abdomen; a Rumpel-Leede test was positive. Initial studies were as follows: Hemoglobin 10.4 grams, WBC 6,000 (63 polys. with 8 stabs and 37 lymphs), hemotocrit 34 per cent. The prothrombin time was 2 minutes (less than 10 per cent of normal). The urine was loaded with red cells. A chest x-ray showed only some pleural thickening at the right base. Flat films of the abdomen (supine and erect) did not show any free air under the diaphragm but both large and small bowel were distended and contained multiple fluid levels. In addition free fluid was present in the peritoneal cavity (Figure 2).

Several transfusions of fresh whole blood were given and a rectal tube was inserted. He was given 50 mgm. of vitamin K_1 oxide intravenously; the prothrombin time rose to 52 percent; following two more doses it was 82 and 100 per cent. A Levine tube was inserted into the stomach and nasogastric suction was applied. Intravenous fluids were given. The blood pressure remained relatively stable at all times. There was never any real sign of shock. On the third hospital day peristalsis was present and the Rumpel-Leede test became negative, both for the first time. However abdominal distention persisted and the following day the patient had a severe nosebleed. Liver function tests were then done to determine if any other cause for bleeding existed, but they were all within normal limits. There was after this no more evidence of bleeding; the hemoglobin remained stabilized at about 13.8 grams.

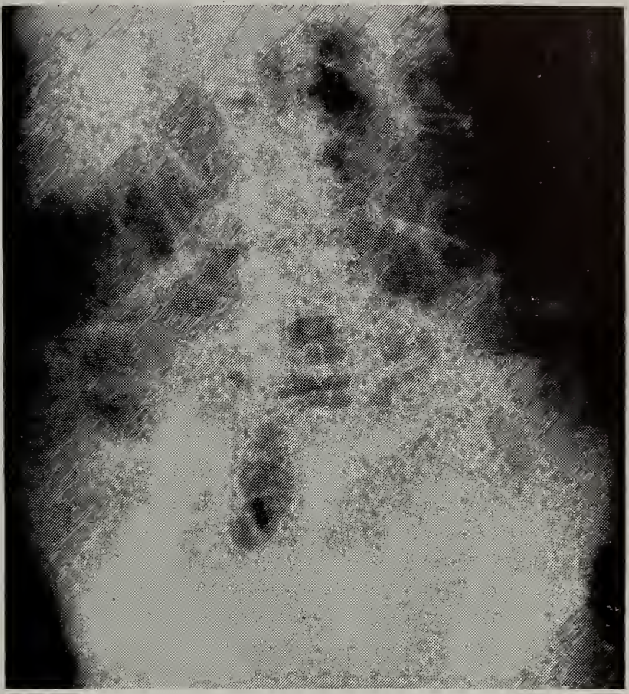


Figure 2

This shows a fluid level blood in the pelvis on an erect flat film of the abdomen.

An electrocardiogram taken at this time was not remarkable. The patient had begun to take clear liquids by mouth on the fourth day and was gradually switched over to a soft diet. The Levine tube was removed on the sixth hospital day. He was discharged on April 10, 1959 after 15 days in the hospital. Because he never had any chest pain or other evidence of coronary artery disease while in the hospital, it was decided to discontinue anticoagulant therapy. Follow-up seven months later showed that the patient had been free of bleeding.

DISCUSSION

In both cases it was almost certain that bleeding had occurred into the peritoneal cavity. In the first case old blood was aspirated. In the second case there was roentgenologic evidence. In both instances anticoagulants had been given and the prothrombin time was below therapeutic levels at the time of bleeding. The fact that the clinical condition of both patients responded rapidly to vitamin K_1 oxide is further evidence that hemorrhage had caused the abdominal crises.

Stern and Dreskin[2] found the most common types of bleeding from anticoagulants to be the skin, the genitourinary and the gastrointestinal tract. None of their patients had intraperitoneal bleeding. The patient with gastroitestinal bleeding subsequently showed a duodenal ulcer on G.I. Series. Duff and Shull[3] reviewed the literature since 1941 and found reports of 21 deaths attributed to dicumarol. None of these specifically showed intraperitoneal bleeding, although six cases were merely listed as dying of "hemorrhagic diathesis." The authors presented one case of their own, a 36 year old woman treated with dicumarol because of thrombophlebitis. She presented with predominantly neurologic signs as well as with lower abdominal cramps, hemoptysis, and vaginal bleeding. Post-mortem examination showed widespread hemorrhages, including 100 cc. of blood in the peritoneal cavity.

RESULTS

Lilly and Lee[4] reported five deaths and five serious post-operative complications arising from anticoagulant therapy. One case who had had a subtotal gastric resection developed hemoperitoneum while receiving anticoagulants. This patient recovered. They mentioned one patient on dicumarol who expired with diffuse hemorrhage into the peritoneal cavity, the renal fossae and into the sites of alcohol injections which had been done on the lumbar sympathetic trunks. Wesley[5] et al. showed two cases of massive intraperitoneal hemorrhage arising from various ovarian follicular structures during anticoagulant therapy. Each diagnosis was made at larotomy. Hohf[6] reported two instances of retroperitoneal hemorrhage caused by lumbar sympathetic blocks used in conjunction with anticoagulant therapy. They concluded that there is undue risk in using lumbar blocks in conjunction with anticoagulants. This conclusion is not justified if the conditions of Wright's group are met, as mentioned earlier. None of these authors present patients with myocardial infarction who bled primarily into the peritoneal cavity and who recovered. It is beyond the scope of this paper to discuss the complex factors involved in blood clotting.

SUMMARY

Two cases are presented. Acute surgical abdomen was simulated by hemorrhage due to dicumerol therapy for myocardial infarction. No previous cause for bleeding was known. Both patients recovered after prompt administration of vitamin K_1 oxide. This complication is probably not rare, although it is practically never reported.

A critical review of the literature on anticoagulants, particularly when they are used in the treatment of myocardial infarction, shows a rather low incidence of hemorrhage when the patients are carefully observed. These patients should nearly always be educated in the hazards of anticoagulants.

ADDENDUM

The author thanks Thomas M. McMillan, M.D. for advice and critcism in preparing this paper. He also thanks E. K. Mehne, M.D. of the Wilmington Veterans Administration Hospital and Harold Rafal, M.D. of the Wilmington General Hospital for graciously submitting these cases for publicatios.

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LOWER EXTREMITY AMPUTATIONS

● Amputations are on the increase, particularly in our aged population, according to this author. He reviews some of the principles involved at the various levels of amputation of the lower extremity.

Donald G. McHale, M.D.*

In reviewing a study of the operations performed at this hospital in the past year, it confirmed an impression that we were actually performing more major lower extremity amputations than in previous years. There were thirteen below knee amputations, and twelve above knee amputations. Associated surgical procedures with these amputations are fairly numerous and include aortograms, femoral angiograms, sympathectomies, exploration of vessels, insertions of grafts, amputations and incision and drainage of infections of toes, and embolectomies. It is apparent that we are dealing with a type surgical problem which is not uncommon and which appears to be on the increase in the patient population in this hospital.

The Greater Life Span

Numerous articles on the treatment of the elderly patient indicate the fact that there is considerable attention being focused on this increase in number of our older aged population. Some statistics claim there are sixty million people over middle age in the United States. There are twenty million people who have reached age sixty-five and each year an additional four million is being added to this latter group. It is because of certain of the above mentioned items that consideration is being given to this problem of leg amputations.

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PREOPERATIVE CONSIDERATIONS

The majority of these patients previously mentioned came to surgery because of the so called peripheral vascular failure of the extremities and their unsuccessful treatment . These included for the most part arteriosclerosis obliterans, with and without diabetes, thromboangitis obliterans and arterial embolism. Only one amputation below the knee in this series was needed as the result of acute trauma.

Though necessary, amputation of an extremity is an unpleasant type of surgical treatment for both the patient and the physician. There is a certain reluctance on the surgeon's part to have to suggest such a mutilating procedure. The patient often has spent considerable time trying to stave off the prospects of such a procedure; indeed, he is often depleted both physically, mentally and economically in a prolonged battle trying to save the extremity.

When the indications for amputation are clear, it seems less cruel to urge the patient and his family to accept amputation early, rather than to continue a long period of fruitless, conservative treatment which is expensive and ultimately demoralizing to both parties.

ARTERIOSCLEROSIS OBLITERANS

In the chronic occlusive types of arterial disease, arteriosclerosis obliterans is the commonest cause of arterial occlusion. It may be segmental, affecting short portions of the aorta, iliac, femoral or popliteal arteries. It may involve these large arteries diffusely or it may be chiefly a small vessel disease, involving arteries such as the anterior and posterior tibial, peroneal or the named and unnamed digital arteries of the feet and even the arterioles. A fair amount of literature has been published on the differences or sameness of the occlusive process in the diabetic versus the non-diabetic patients. Other than that the diabetic patient may sometimes be younger and thus not so far along in the progressive changes of the disease, there seems to be little separating these two types of patients.

The demonstration of the occasional segmental nature of the occlusive process has led to enthusiastic attempts to treat the disease by insertion of arterial or synthetic vascular replacements as substitutes for homografts. It is felt that these later grafts will completely supplant homografts.

Therapy Program

It is questionable just how much can be done in the conservative management of peripheral vascular disease. One wonders whether any break-through can be accomplished in slowing down the various degenerative processes that accompany aging. Conservative treatment other than surgery can be listed to round out the therapy program: (a) a diet of unsaturated fatty acids, (b) weight reduction in the obese with conservation of existing blood supply, (c) long term anti-coagulant therapy (dicumarol), (d) development of collateral circulation with the elimination of vasospasm by the use of drugs, priscoline, arlidin, whiskey, and other measures such as sleeping with the head of the bedstead elevated four to six inches, Buerger's exercises or walking daily to tolerance. To reduce the metabolic demands of the tissues the usual careful foot hygiene should be observed, avoiding getting the feet cold or damp, excessive heat and tight shoes. The use of clean socks, careful foot hygiene, care of initial infections, appropriate antibiotics as shown by culture are indicated. The patient who does not require normal walking ability and is not threatened by necrosis is advised to care for his feet and await what collateral circulation will develop.

SURGERY OTHER THAN AMPUTATION

1. Sympathectomy: While arterial grafting should offer the greatest chance in restoring circulation to the ischemic leg, sympathectomy is still a useful adjunct. Its ability to increase blood flow to muscle is less than its ability to increase blood flow to skin in the normal person. Hence, many feel that it has little to offer to the patient with intermittent claudication. It may, however, by improving the nutrition of the skin, help stave off the infections which often follow trivial trauma leading to necrosis and ultimate amputation.

2. *Arterial graft:* When a preliminary angiogram shows a segmental blockage in a major vessel, the chance for a graft to restore the circulation is best. We have used the bypass method most frequently. The graft is inserted end of graft to side of vessel above and below the block. Such a bypass graft does not disturb the existing collateral circulation and it is easily tolerated by the patient without fear that if unsuccessful it may make a poor situation worse. We have not routinely used routine long term postoperative anti-coagulants to prevent additional occlusive episodes as some have recommended.

3. *Thromboendarterectomy:* Thrombus and arteriosclerotic plaques may be excised from accessible segments of peripheral vessels by means of arteriotomy and dissection of the involved intima and obliterated segment. The wall is resutured over a proper sized catheter. We have reserved this method for the patient with small discrete and well localized occlusive segments and have preferred to use the bypass procedure in the majority of the cases.

THROMBOANGITIS OBLITERANS

There is increasing evidence to suggest that many patients previously diagnosed as Buerger's disease or thromboangitis obliterans actually had segmental arteriosclerotic occlusive disease. Patients in the third and fourth decades with characteristic manifestations of Buerger's disease should be studied by means of arteriograms. Many writers have now reported complete relief of the difficulty by endarterectomy or bypass grafts. Certain of these cases show small vessel involvement of a segmental nature associated with moderate to severe pain and chronic infections of the ends of the digits. These patients typically improve with the cessation of smoking only to suffer recurrence of their complaints when tobacco is resumed. Obviously tobacco should be prohibited. A strong doctor-patient relationship may help encourage them to stop smoking.

ARTERIAL EMBOLIZATION

The goal of treatment here is preservation of function; therapy which preserves the limb, but in which the usefulness of the limb is severely compromised must be regarded as unsuccessful. Acute symptoms are seen in about half of the cases; in others the onset may be insidious and many of the symptoms are markedly reduced. The usual picture described is that of abrupt onset in a patient who has a history of old or recent myocardial infarction, mitral stenosis or auricular fibrillation. Sudden pain occurs in the extremity, followed with pallor of the skin, pulses below the block are absent, and some degree of motor and sensory paralyses is seen. The common sites of lodgement are the bifurcation of the aorta, the bifurcation of the common femoral artery and the popliteal artery.

Differentiation between embolization and acute arterial thrombosis may be very difficult. In the latter, sympathetic block may be helpful, but angiogram and surgical exploration should be considered. The earlier surgery can be performed the greater the chance for restoration of circulation. If the angiograms in either case show a good distal arterial tree beyond the point of occlusion, it encourages one to hope for successful surgery. Surgery usually should be withheld in the patient whose general condition is poor, such as one who has suffered a major cerebro-vascular accident, myocardial infarction, etc.

ACUTE TRAUMA AND OTHER CONDITIONS:

If amputation is necessary here, it simply means preserving the optimal length of the extremity if possible for the fitting of a prosthesis. In amputations for chronic osteomyelitis, such as following compound fractures, tumors of the extremities, useless deformed limbs, etc., one may be able to pick as an amputation level the so called "sites-of-election."

Operative Considerations

As in surgery of the upper extremity, there seems to be more attention being paid now to the preservation of as much of the lower limb that can possibly be saved. Except for the great toe, the other toes can be removed without sacrificing much in the way of walking function. Leaving the great toe alone, however, can pose the problem later of a marked hallux, despite the continuous use in the shoe of a padded sponge rubber supplanting the missing toes.

Transmetatarsal Amputations

Section of the foot through the distal metatarsals has been regarded about the only practical foot amputation, except for the Syme's operation. The techniques of these operations can easily be reviewed in any surgical textbook, so that the actual operative procedure will not be repeated here. Our experience with transmetatarsal amputations has not been very extensive. We have had little opportunity in our types of cases to attempt this operation. On the few occasions it has been done there has been frequent difficulty in accomplishing a healed stump that can take the brunt of weight bearing. This may be due to the type of situation that was encountered. Theoretically, if one has sufficient foot to enable one to walk and balance oneself and a prosthesis can be fashioned for enhancing function and cosmetic appearance, this type amputation should have a place in ones surgical procedures.

Syme's Amputation

This amputation has never been as popular in the United States as it reportedly has been achieved in Canada and England. While it is included in all the surgical text books, it is my personal experience to have seen very few of these amputations done and have had very little opportunity to observe many patients in the immediate or remote postoperative period. There seems to be a small revival of interest in this amputation in some areas currently in the United States.

The Objections

Some of the objections to this useful amputation have been that there is a loss of some 2½ to 3¼ inches of the length of the normal limb. Now while this Syme's amputation which removes the foot at the ankle while retaining the tough heel pad for weight-bearing will provide one of the most satisfactory end-bearing stumps known, due to the above mentioned loss of length, the gait without a prosthesis is lopsided. Moreover, absence of the forefoot causes drop-off at the end of the stance phase, and loss of normal ankle function produces knee extension during weight bearing. A functional prosthesis for the Syme amputation must lengthen the limb therefore so as to match the normal leg in the standing position, supply a forefoot to increase effective leg length at toe-off and provide the equivalent of plantar and dorsi-flexion.

The Functional Prosthesis

The conventional Syme prosthesis, with laced leather socket and metal side bars, fulfils all the functional requirements but it too has a number of disadvantages. The sidebars are subject to frequent breakage. The leather socket deteriorates and loses shape. There is xcessiv bulkiness in the already broad area of the malleoli. Excessive patient weight often requires auxiliary suspension. The shoe on the normal side often must be elevated to provide clearance for the ankle joint assembly. Several years ago in Canada certain improvements were made in this conventional Syme prosthesis creating a prosthesis lighter in weight, better in appearance, comprising a plastic laminate socket with no ankle joint attached to the so-called "SACH" foot (solid ankle cushion heel). This prosthesis, the so-called Canadian type, besides being lighter and less bulky at the ankle than the conventional Syme prosthesis is sai dto exhibit fewer structural failures because of a plastic reinforced laminated structural design, requires little or no auxiliary suspension, is free of noise and is completely resistant to weather and perspiration. Comfort is improved owing to better heat dissipation and to reduced shock at heel contact. The price of the prosthesis is less and the range of possible foot heights is adequate to fit the range of Syme stump lengths without elevating the shoe on the normal side. It is claimed that the technique may be adapted for the use with the up to now largely unaccepted and unpopular Boyd, Pirogott and Chopart amputations.

Below Knee Amputations

No prosthesis can begin to compare with the patients own functioning knee joint. It is primarily for this reason that a serious effort is made in all feasible cases to perform a below knee rather than higher amputation. While five to seven inches of stump length is advocated for adequate fitting of a below knee amputation, some prosthesis makers have managed on somewhat less than this. This level amputation often presents many difficulties in securing healing and a good functional stump. Since the tibia is just beneath the anterior skin flap, little protection can be afforded over it regardless of how smoothly the distal end of the tibia may be bevelled. Various suggestions have been made as to fashioning the skin flaps. Some have advocated placing the sutured skin scar centrally, some place it posteriorly and other have suggested taking medial and lateral skin flaps. Whether preserving as much medial skin as possible enhances venous drainage, regarded by some as a factor in healing, has not been ascertained in our personal experience. Suction sockets have been used with satisfaction by some patients in these below-the-knee amputees. Certain limitations are still met with in this type of prosthesis; it seems to be more popular for use with the above knee amputees.

Operative Procedure

On the operative procedure, positioning the patient prone, face down, enables the operator to do the amputation with less technical difficulty. The knee is flexed to 90° bracing the knee in this position, and allows one to see around the circumference of the calf and lessens the frequent twisting and maneuvering of the leg necessary in the more conventional recumbent face up position. Our skin flaps are usually of about equal length allowing the scar to be positioned at the end of stump. An attempt is made to cover the tibia, as much as possible, by suturing the tailored muscle fascia layer over the tibia. We bevel the distal tibia, cut the nerves high and let them retract, and bring the edges of the skin flaps together without tension with a minimum of skin sutures. A thin strip of vaseline gauze over the suture line minimizes "sticking" of the first redressing. Care is taken not to apply the stump dressing with any pressure that might jeopardize the skin flaps. Plain bandage may be used if one wishes to avoid the tendency to apply an Ace bandage with a certain amount of undue pressure. Redressing in 24-48 hours will obvioate an undue tension on the stump Ace bandage has been used. I have seen with postoperative edema or swelling if an several cases in previous years where the skin flaps were partially lost due to undue presssure of the Ace bandage following normal postoperative reaction and swelling of the stump. In some patients a posterior plaster split will prevent flexion of the knee which many of these older patients tend to acquire, despite repeated admonishing.

Above Knee Amputations

There are fewer complications encountered in the above knee amputations than in the below knee amputations. Healing is usually accomplished per primam, unless the circulation at the level selected is inadequate, or if because of age or poor personal hygiene the patient is unable to cooperate with maintaining an adequate sterile bandaged stump. Some of our patients have been confused, have pulled off the dressings and, if they are incontinent of bowel or bladder, the stump is often exposed to all sorts of bacterial contamination. One above knee amputee developed a gas gangrene type of infection several years ago believed due to circumstances cited above which demanded prompt and adequate radical incisions and drainage and drug therapy; fortunately he recovered.

Drains are used in any of these amputations of the lower limb if one feels there are indications for their usage. Each case is decided on its individual aspects. On occasions even these above knee amputations have failed to heal and revision or higher amputations have had to be carried out. It might be mentioned that some of our patients are admitted in poor general condition and nutritional deficiencies and it is in these individuals naturally that most of our problems and complications occur.

Postoperative Considerations

The main postoperative consideration is to seek as early and as complete rehabilitation as is possible for each patient. If the patient is facing an inevitable amputation we try to encourage him by showing him one or several well rehabilitated amputees who are using their prostheses and there are usually several of these always in the hospital. If none is in the hospital, one or several such patients can be recalled and they are usually willing and anxious to show how they can get about and are glad to encourage the prospective amputee on his successful recovery. A program of exercises can be initiated for the preoperative, operative and postoperative periods. We are fortunate in haivng a Physical Medicine and Rehabilitation Service in our hospital with experienced personnel which is an important and valuable asset in the patients' postoperative care. Graduated arm and leg exercises are instituted, and these are maintained to reach optimal use of the various needs of balance and locomotion.

Early Rehabilitation Important

The patient is taught to walk with a normal gait and any adjustment in the fit of the prosthesis is usually completed prior to the patients' discharge. In the older patient a pylon or long leg brace can be used early to encourage the patient to realize he is again erect and walking. This helps prevent them losing the desire to get about again, which many of them will do if left too long to their own devices. To prevent their fear of falling, they are trained to fall on a mat in such a way as to prevent them hurting themselves. This gives them more assurance in the use of the prosthesis. In recent cases an ischial weight bearing long leg brace has been recommended with a locked or rigid knee. As mentioned earlier this allows the patients to become erect more quickly and gives them considerable satisfaction. Some of the patients in the older age group are so satisfied and get so used to this brace that they are reluctant to be changed to a regular prosthesis.

The Bilateral Amputee

Nothing has been said of the bilateral amputee, and this situation is, of course, not infrequently encountered. Obviously bilateral below knee amputees will do better than amputations above the knee. Even if some situation prevents them wearing a prosthesis, having some additional below knee stump allows a certain better leverage as in turning in bed. Many of the patients make a point of wanting the amputation stumps match in length either above or below the knee. Disarticulation amputations at the knee are not very often required. Even these can be fitted with a prosthesis and satisfactory use can be obtained, but this poses certain problems for the limb maker which they would rather avoid if possible.

The Surgeon Sees It Through

There is no question then that this problem will always be with us. It is dubious at this time that any real prevention of vascular degenerative changes can be prevented since we are not sure of their etiology despite the many theories that have been advanced. The success of grafts have had limited and sometimes short-lived before clotting occurs. Once the surgeon and patient see and accept the need of amputation, it is a responsibility and a kindness for the surgeon to follow the patient through his convalescence until he has gained optimal rehabilitation. Patients are grateful to have the continued interest of their doctor rather than to be turned over completely to the sole care of the limb maker.

GROUP THERAPY WITH CHRONIC PSYCHIATRIC OUT-PATIENTS*

● **A discussion of group psychotherapy with chronic psychiatric patients unable to maintain other than a marginal adjustment to life. The author presents generalizations which help explain a psychotherapist's observation in such a group.**

Howard J. Shear, Ph.D.**

This paper concerns our experiences in out-patient group-psychotherapy with patients who have had periodic psychotic episodes. The group grew out of a need to provide help for a growing number of chronic patients, who while severely malfunctioning psychologically and unable to sustain employment are able to maintain at least a marginal adjustment in life. Characteristically these patients had a psychotic break with reality while in the military service, recovered sufficiently to return to society, but periodically lose control of themselves, and are hospitalized for a short period. Despite a pension from the government for their service-connected disability and opportunities to receive medication and brief supportive psychotherapeutic conferences on an out-patient basis, they remain a source of anxiety to their families and community when not in the hospital. Many take limited advantage of the out-patient resources. In order to help these men further, we decided three years ago to try to engage some of them in a group therapy experience at our Mental Hygiene Clinic.

We arbitrarily invited 4 potential candidates to attend the first meeting. As time went on, other patients were invited. Because of the difficulty which some of these patients have in becoming part of a group, it was suggested by Julia Mayo, D.S.W., psychiatric social worker at the VAH, that some of the psychiatric in-patients, whom we felt had the above-mentioned characteristics, sit in with the out-patient group. Upon discharge from the psychiatric ward, they were then invited to be members. With all patients, membership was voluntary, although direct suggestion was made to some to give the group a try. A woman psychology trainee has been sitting in with the group, which seems to have worked out quite well in terms of a valuable experience for her and an additional, meaningful, therapeutic force in the group.

As the group continued to function, certain characteristic attitudes and behaviors related to the extremely difficult time these patients have in belonging to social and work groups became more and more apparent. Besides being unable to sustain employment, the social life of these patients has been minimal. Holding the attitudes they do or behaving the way they do would probably be either rejected by many people within most social and work groups, and/or the pressures within these groups for the patients to change their attitudes or behaviors would be so strong that these patients would feel extremely anxious and uncomfortable. As a last resort in their desperate attempts to defend themselves against these pressures to change, they would probably withdraw from these groups.

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*Searles A. Grossman, Ph.D., Chief Psychologist at the Veterans Administration Hospital, Wilmington, was helpful in the formation and functioning of this group.

**Howard J. Shear, Ph.D., Clinical Psychologist, Veteran's Administration Hospital, Wilmington.

Not truly belonging to any social or work groups, these people are not able to satisfy or soon lose hope of satisfying a variety of needs common to all people, the satisfaction of which and/or the striving to satisfy allow a person to function as a human being. Social and work groups are important environments of human beings, and individuals completely detached from any such environments cannot be persons. The situation of the marginally adjusted patients thus takes on the character of a vicious circle. Unable to satisfy or to sustain hope of satisfying needs common to human beings leads to a greater intensity and pervasiveness of the very behaviors which are related to the obstruction of belonging to social and work groups in the first place.

Rigid Patterns

In reflecting upon these attitudes and behaviors, it is difficult to evaluate their etiology except to speculate that in childhood the attitudes and behaviors of the significant people around them were important factors in their development. However, the present functional significance of these attitudes and behaviors in the lives of these patients, their self-perpetuating nature, and the support for these attitudes and rigid patterns of behavior which they get and invoke from others is less difficult to understand. The seven patients presently active in this treatment group are uniquely individual, and the more the writer gets to know them, the more aware of their individuality he becomes; however, they all share this common characteristic of rigid behavior or attitude that a great many people in most social and work groups find unacceptable. It is important to note that one can observe psychologically healthy people on occasion behaving in the same way or expressing the same attitudes. What distinguishes these patients is that their attitudes and ways of operating are very, very rigid, pervasive, intense, continuous, extreme, and "not subject to change."

The Egocentric Attitude

One attitude observed in these patients which seems to cover a range of emotional reactions has been egocentricity. These people are preoccupied with themselves, their own feelings and ideas, and do not allow themselves to experience the feelings and thoughts of the other people in the group or express care or strong interest in them. However in our group, rather than being rejected, egocentricity has generally been accepted which has resulted in the patients feeling that this group is a social situation where it is "safe" to be a member. It should be mentioned here that while acceptance usually implies liking or approval, as used here it means an emotional willingness to live with something. Because their egocentricity has been accepted, the patients then place value on their group and the people in it. Besides finding their oft-rejected egocentricity accepted, they also experience reactions which are not egocentric from others in the group, where at least one other person is honestly interested in them. These experiences lay the groundwork for a patient developing interest and care for something outside himself which, in effect, diminishes egocentricity. These are probably the mechanisms through which a child becomes less egocentric. Most of these patients are just beginning to give up their egocentricity, while in some there appears to be no development in this direcion.

Illustrating the kind of involvement these patients have in this group are the following incidents: In one of the sessions, some of the patients verbalized the question, "Why do I continue to come to these meetings?" One patient cross-examined other patients to find out why they attended. A patient responded, "It gives me a chance to blow off steam." Another answered, "I learn things." Some verbalized puzzlement and couldn't say why. In another session, the patients spent a considerable amount of time evaluating psychologists. They were very careful to talk about psychologists in general and overall expressed positive attitudes. However, one of the patients, although very controlled, allowed himself to criticize psychologists for a variety of inadequacies and kept challenging the therapist to take issue with him through direct questions about his criticisms. After a while of indirect, negative evaluations of psychologists, he turned to the therapist and respectfully said, "Psychologists do know how to listen."

"Omnipotence" a Challenge

Another attitude which seems to lead to rejection or "intolerable" pressure to change from a great many people might be called omnipotence. In this group, these patients have been extremely controlling people, insisting and demanding emotionally that reality be a particular way. If someone "dares" to try to change what is reality for them, they feel extremely threatened and will defend themselves in some way. In our group, the most usual defenses against such a challenge has been for the patient under "attack" to become more and more autistic in his thinking and detached emotionally. For example, there have been occasions when a more aggressive patient in the group quite authoritatively stated an opinion designed to change the views of others in the group. Another patient aggressively took issue with the authority of the first patient, although consciously feeling that he was having a non-aggressive conversation. As the "unconscious argument" increased in tempo, rather than each participant "relaxing" and experiencing the reality of the other person and himself as they were, each participant became more and more autistic in his ideation and increasingly unaware of the existing feeling. Rather than really listening, he was busy organizing his own thoughts, so that when the other person stopped for a breath, he would be able to state his opinion. Focusing on the abstract has been a general characteristic of this group interaction. These people did not attend to the concrete "gut" feelings taking place, but concentrated on the abstract, "up-in-the-clouds," ideation.

Defenses Built Up

To preserve omnipotence, autistic thinking and emotional detachment were used as defenses against any reality in the group which would "destroy" omnipotence. For example, there were communications in the group which were not really designed to change, "attack," another, as in the above example, but were more narcissistic, attention getting, or attempts to "blow off steam." If a listener could allow himself to experience the reality of these communications and their effects upon him, it would lead to a decrease in omnipotence. Because the "listeners" in the group "had to" maintain their omnipotence, they either autistically interpreted the event so that it would fit in with their preconceived cognitive system or they became so detached emotionally that they do not experience "new" feelings. An example of this was noted when one patient characteristically and omnipotently sought to control reality so that independent, assertive, aggressive, work needs did not exist, while another patient omnipotently sought to control reality so that dependent, direct asking, passive, love needs did not exist. When the first patient expressed himself, the second autistically interpreted the first's thoughts accordingly to his own way of controlling reality, while if the second patient expressed himself the first did the same thing. Emotionally, each was so repressed and detached that they could not let themselves have feelings about each other, for if they allowed themselves to become emotionally involved, the very needs, the existence of which they were seeking to deny, would be felt and experienced. One apparent effect was a reduction in omnipotence through an occasional expression of feeling by a group member which some patients were omnipotently controlling. The need to be omnipotent is reduced because these patients experience that the group was not shattered; there were no "terrible" consequences if these feelings existed.

Three Patterns

There are three general patterns of behavior employed by these patients to preserve their omnipotence, all of which sustain egocentricity and evoke rejection or "intolerable" pressures to change from others. Each way of operating attempts to control, manipulate, or coerce reality to be the way it "must" be. They are each passive in the sense that the person cannot decide to react this way or not, but he "must" behave in this way to keep comfortable, maintain his equilibrium, control reality. Therefore, he "must" passively react, go along, in this particular way rather than actively choosing to do so. This is contrasted with an active way of operating in which the person is not "forced" to react in a particular way to prevent his entire world from shattering, but in a relaxed way "chooses" appropriately to get away from it all, love, work, etc.

In the first pattern, the patient passively withdraws. If any event comes up that "cannot be accepted," the standard maneuver is to physically or psychologically withdraw. The person seems to say to himself, "If I am alone or have no feeling, everything will be all right." The second maneuver for handling an unacceptable reality is a passive dependent reaction. Here the person seems to say, "If I am taken care of or am weak, everything will be all right." The third way of controlling unacceptable realities is by behaving in a passive aggressive manner. Here the person seems to say, "If I am the caretaker or am strong, everything will be all right." By using one of these ways of operating, combinations of them, or changing from one to another when "appropriate" the patients in this group seemed able to maintain their omnipotence. These maneuvers are generally unconscious.

At the present time there are seven patients who attend our group, with former diagnoses ranging from catatonic, undifferentiated, paranoid Schizophrenia to psychotic depression. Six of these men are 40 or over, two being in their sixties; one is in his late twenties. One is Negro. These men seem to find in this group a social situation where they can belong and socialize, because they experience acceptance of their egocentricity and omnipotence, discover that others in the group are interested in them and care about them, and find that there are varied feelings which can exist without catastrophic consequences. If nothing else, this group seems to provide an emotional support which helps some of these men stay out of a hospital; but in addition there does seem to be some slight reduction of egocentricity and omnipotence in a few of these patients.

Psychiatric History

The following is a brief, very condensed sketch of the psychiatric history of one of these patients. He is the Negro in the group, 49 years old, divorced, has two children, and before service worked as a semi-skilled laborer. He was inducted in 1942 and separated in 1943 for an NP condition. Returning home, he refused to work and tended to be seclusive and to worry. After four months he was committed to the state hospital and his condition diagnosed as a Schizophrenic Reaction. After eleven months he was hospitalized in our NP atric hospital. He was discharged from this hospital after eight months on a trial basis, and was to report to our Mental Hygiene Clinic. Here he received medication and supportive interviews, but after several months he was hospitalized on our NP ward. Upon discharge, he would on occasion come in to the Clinic for medication and a supportive interview but discontinued this despite his need for support. In December 1956, he came to the Clinic for help, and was assigned to the present group. Since this time, he has regularly attended the group once a week. He has maintained a marginal adjustment without further hospitalization, and on a number of occasions has stated that he feels that the group has kept him out of the hospital. Quoting from an independent psychiatric evaluation made on 11/5/58 by D. A. Rovito, M.D., Chief, Psychiatrist. "This veteran appears less disorganized in his thinking at the present time. The group has had the effect of facilitating the exchange of ideas and feelings, and alleviating mistrust. . . . he has gained at least some intellectual insight, and the ground has been laid for better socializing."

On occasion during the group meetings this patient has verbalized how he formerly believed that it was entirely up to the doctors to help him, but he now feels each patient has some responsibility to help himself. When he first joined the group, someone had to drive him to the hospital because he was too anxious to travel alone by bus, but with gentle suggestion, patient waiting for him to change in his own unique way, he now rides the bus to the meetings. He does some brief part-time work like house painting or washing cars, and it will be interesting to see if there will be vocational improvement with time.

There is one aspect of working with such a group which the writer has found to be of valuable personal experience. Although these men are extremely egocentric and omnipotent and generally estranged from the stream of social living, these very processes seem to deepen their sensitivities to "basic," crucial, human needs which for many psychologically healthy people are almost lost from awareness in their active involvements with life. Being aware is certainly not an indication of "goodness" as more healthy people unconsciously satisfy a variety of needs in the very process of actively living. Despite their extreme sensitivity, these patients cannot creatively and adaptively satisfy or strive to satisfy these "basic" needs. They are much too passive, repressed, and cut off from life. However, massive repression, chronic frustration, self preoccupation, and compulsive needs to control reality lead to their becoming so sensitive to unconscious forces and full of pent-up expressiveness, that they may on occasion either vividly and overtly, or with the symbolism of a dream, act out and reveal some vital human characteristics.

SENIORITY AMONG MEDICAL SOCIETIES

William H. Kraemer, M. D.

The seniority among the medical societies in the United States has always been debatable which was due to the fact that many of the medical societies were founded under the government of providences or colonies subject to the British Commonwealth prior to the American revolution.

Among the principal medical societies in Colonial America were:

Boston Society	1735
New York Society	1749
Philadelphia Society	1765
New Jersey Society	1766
New York Society	1769

Among the principal medical societies operating under a charter of the respective States of the United States are:

Massachusetts	1781
(Nov. 1—Charter signed by John Hancock, first Governor of Massachusetts)	
Delaware	1789
(Feb. 3—George Read, acting Governor)	
South Carolina	1789
New Jersey	1790
New Hampshire	1791
Connecticut	1792

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●This case emphasizes the importance of a careful neurological examination in the evaluation of patients exhibiting psychiatric symptoms in connection with migraine headaches.

HEMANGIOMA OF THE BRAIN SIMULATING THE MIGRAINE SYNDROME

D. A. Rovito, M.D.*

Martin M. Mandel, M.D.**

The migraine syndrome is characterized by unilateral headache, with periods of recurrence as well as gastrointestinal and ocular manifestations. There are, however, many types of unilateral headache which simulate the migraine syndrome, but which in reality may be produced by an intracranial aneurysm or neoplasm.[3,4,6] Frankel[1] reported the important relationship between cerebral aneurysm and migraine. The occurrence of a tumor or an arteriovenous malformation may also produce a headache that is indistinguishable from migraine and the following case is presented to emphasize a lesser known cause of this type of headache.

Report of a Case

This 33-year-old man was admitted to the Veterans Administration Hospital in Wilmington, Delaware on June 6, 1958 with the complaint of intense headache. He was first seen in the Mental Hygiene Clinic in June 1955 because of unilateral headaches, which occurred at varying intervals from once in three months to as often as once or twice a week; usually the headaches persisted from one to three days. They were located over right side of the head and produced a throbbing sensation behind the right eyeball and were accompanied by nausea and vomiting. Occasionally these were preceded by visual disturbances. Little relief was obtained with Cafergot and other analgesics. He felt that these headaches were of greater intensity and of a different distribution from his usual "migraine" headaches.

His personality was that of a perfectionist, meticulous and ambitious, but easily upset by minor frustrations. A presumptive diagnosis of migraine with anxiety state was made.

Intensive psychotherapy was instituted, but his headaches persisted. Exacerbation of headache, accompanied by a new symptom of dizziness, led therapist to recommend further studies.

Physical examination upon admission to the hospital revealed an acutely ill white man, who was complaining about his severe headaches, B.P. 128/74. Systemic review normal except for the nervous system. Pupils were unequal in size, the right pupil being larger than the left. The right pupil was also dilated, fixed to light and accommodation. The right eyeball showed paresis of inward-outward rotation and impairment of upper rotation. The patient stated: "I see your finger twice," when one finger was held up as he looked to the left and right. The optic discs appeared to be well outlined, although there was some haziness of the nasal margin of the right optic disc. There was weakness of retraction of the left corner of the mouth and weakness of the left hand grip. Deep tendon reflexes appared to be bilaterally active and equal. No Babinski or other pathological reflexes could be elicited. These findings were indicative of an incomplete right oculomotor nerve paresis and right abducens nerve palsy. An intracranial aneurysm, involving the right internal carotid artery with rupture producing a subarachnoid hemorrhage was considered a likely diagnostic possibility. An intracranial neoplasm also had to be excluded.

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**Instructor in Neurology, Jefferson Medical College, Phila., Pa.

The hemogram and urinalysis were normal. The blood serology was negative. A lumbar puncture was performed and the spinal fluid which was yellow in color was obtained with a pressure measuring 600 millimeters of water. The spinal fluid protein was 165 milligrams per hundred cubic centimeters. Roentgenogram of the skull was normal. An electroencephalogram revealed a paroxysmal cerebral dysrhythmia. He was transferred on June 12, 1958 to Veterans Hospital, Perry Point, Md. for special neurosurgical investigation and treatment.

Bilateral internal carotid arteriography demonstrated no abnormalities of the internal carotid, middle cerebral or anterior cerebral vessels. A ventriculogram was reported normal.

At operation on June 23, 1959, an arteriovenous malformation was found in the region of the cysterna magna. A vertebral arteriogram was performed and these roentgenograms showed an arteriovenous malformation arising from the posterior inferior cerebellar artery. This malformation appeared to be resectable and the patient was returned to the operating room on July 2. At this time a vermiform vascular anomaly was found under the right cerebellar lobe. This was resected but the patient expired several days after surgery.

At autopsy, the brain was swollen and showed old and recent bleeding over the hemispheres and cerebellum. An arteriovenous aneurysm was noted in the fourth ventricle. Microscopic examination revealed a mass of blood vessels, consisting of vascular spaces lined with swollen endothelial cells and endothelium packed together tightly without any lumen, consistent with an hemangioma.

DISCUSSION

This case did not fill the criteria of typical migraine, but had many of its features, namely: aura; one-sided headache; nausea and vomiting.[5,7] Frequent psychiatric interviews unfolded the psychological correlates of the migrainous psychosomatic entity. It has been stated that migraine[8] in a young person for whom no relevant family history is obtained, should arouse suspicion of aneurysm. Wolff[2] felt that aneurysm and migraine could be independent and coexistent, although he postulated that repeated migrainous attacks could affect the structure of cerebral blood vessels.

This case also emphasizes the importance of a careful neurologic examination in the evalution of a patient with many psychiatric symptoms, as organic factors may be overlooked and the complaints attributed to a psychogenic basis. The progressive nature of this man's illness was an important factor in pursuing further neurologic investigation including arteriography.

SUMMARY

A case of an arteriovenous angioma is reported in a patient who suffered from migraine headaches for many years, but during recent months exhibited a change in the distribution of his headache and the appearance of a new symptom: dizziness. He had neurologic manifestations of an oculomotor and abducens paresis. An arteriovenous angioma was found at surgery and confirmed by gross and microscopic examination.

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● **Mental disturbances can accompany liver disease. The author cautions that insulin shock therapy may well add to the impairment of liver function and diminish the patient's hope of recovery.**

HEPATITIS CIRRHOSIS CANCER

Report of a Case

Walker Stamps, M.D.

This case is presented because it has an unusually well documented medical history starting initially with hepatitis, followed by cirrhosis, and later primary bile duct hepatoma of the liver. The association of malignant liver tumors with cirrhosis, from any cause, is well known but in this instance a viral origin may also be suspect[1].

Background

In October 1947, when seventeen years old, this white soldier was admitted to the U. S. Army Hepatitis Center at Bayreuth, Germany, because of jaundice "to a shade of green." For two months he was deeply icteric, febrile, at times stuporous but never comatose. There was a 40 pound weight loss. After six months he developed a mental disturbance classified as an anxiety reaction, and was transferred to a mental care institution where he was given insulin subshock therapy over a period of approximately one month. He was discharged from the Army after a total hospitalization of twelve months. Two liver biopsies showed hepatitis.

He felt well until June 1949, when he developed weakness, anorexia, chills, fever, light colored stools and dark urine. He was admitted to the Valley Forge Army Hospital where he remained for approximately six months, with a diagnosis of hepatitis, chronic, without jaundice and minimal cirrhosis of the liver as demonstrated by liver biopsy. He then remained well until March 1956, working regularly as a prison guard at Delaware's "workhouse." He consumed a regular diet except for omission of cabbage, tomatoes and grease, because they induced belching. Four days before admission to the Veterans Hospital at Wilmington, he developed slight throbbing pain in the right upper quadrant and right epigastrium. The pain was aggravated by motion of the trunk and was accompanied by frequent eructation, slight nausea, but no vomiting. The patient became alarmed because of the similarity of this pain to that of his original illness. There had been no jaundice or change in color of urine or feces; there was no alcohol intake. A physical examination was generally negative; the liver was not enlarged to palpation.

Laboratory Data

Urinalysis, normal. RBC 4,300,000, hemoglobin 15.8 grams, hematocrit 44.

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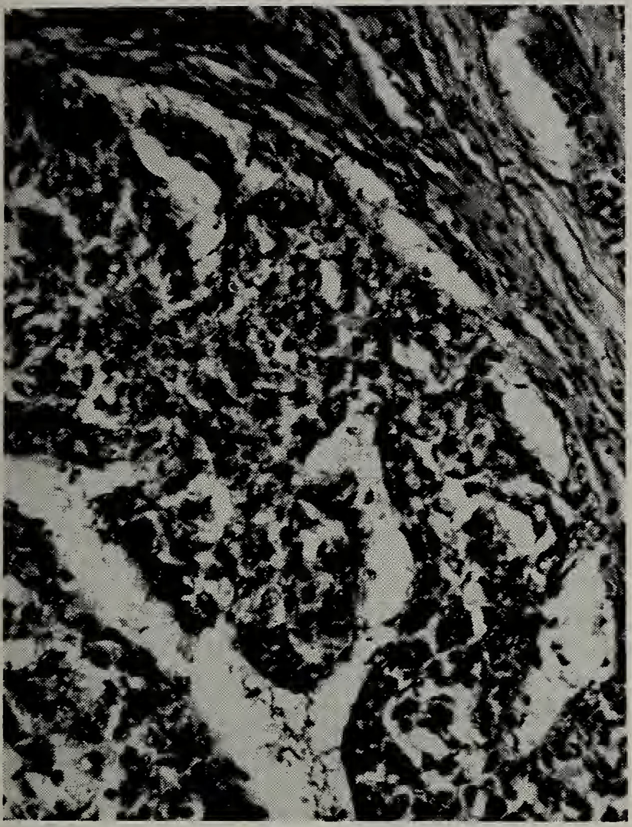
*Assistant Chief, Medical Service, Veterans Administration Hospital, Wilmington, Delaware



LIVER BIOPSY

The central area consists of tumor cells. Connective tissue of cirrhosis appears at the upper right.

Kahn, negative. Serum Bilirubin 1.8. Thymol Turbidity, 1 unit. There was no retention of Bromsulfalein. Cephalin flocculation, negative. Cholesterol 200 mgm%, total protein 8.1, albumin 4.7, globulin 3.4, ratio 1.38. Liver biopsy showed an increased amount of fibrous connective tissue and many proliferated bile ducts; the connective tissue was heavily infiltrated with polymorphonuclear leukocytes, round and plasma cells. The polymorphonuclear infiltration was believed to indicate some degree of either cholangitis or hepatitis.

After one month the patient returned to work, feeling well except for "a lot of trouble with gas." In February 1958, he was readmitted complaining of soreness over a wide area in the epigastrium and a fourteen pound weight loss. A very irregular hard liver edge was felt to descend two finger breadths below the right costal margin. The spleen was not felt.

Laboratory Data

Serum bilirubin 0.5, alkaline phosphatase 7.5, thymol turbidity 1 unit, cephalin flocculation 2+ (48 hours). A total protein 6.3, albumin 2.9, globulin 3.4, A/G ratio .85. A cholecystogram was normal. Liver biopsy showed portal cirrhosis and in addition showed the presence of numerous small areas in which the parenchyma was infiltrated with tumor cells, growing as solid masses of anaplastic cells with large hyperchromatic oval nuclei. Occasional mitotic figures were seen.

In May 1958, the patient expired following a massive gastrointestinal hemorrhage.

Autopsy Findings

The stomach was markedly distended and completely filled with clotted blood, having a volume of about 2 liters. There were esophageal varices present and in the lower esophagus the veins were plainly seen but there was no visible bleeding point. The liver weighed 4,150 grams. It was lobulated and nodular. Five of these lobules had a size of approximately 7 x 5 x 4 cm. These lobular masses consisted of regenerated liver tissue. Sections through the main mass of the liver revealed that over 75% of the parenchyma had been replaced by white granular nodular tumor tissue. The small amount of remaining liver tissue possessed a different color, being yellowish-brown, more opaque, fibrotic and nodular, suggesting the appearance of portal cirrhosis. The portal vein measured 2 cm. in diameter and was completely occluded by a recent red thrombus.

Diagnoses:

1. **Primary bile duct hepatoma.**
2. **Portal cirrhosis of the liver.**
3. **Terminal broncho-pneumonia and edema of the lungs.**

This case also serves to remind us of the mental disturbances that not — infrequently accompany liver disease. The insulin shock therapy may have further impaired liver function and diminished his hope of recovery.

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CLINICAL-PATHOLOGICAL CONFERENCE

BY TRANS-ATLA

ROYAL SOCIETY OF MEDICINE

Case supplied by the Postgraduate Medical School, Hammersmith, London.

The patient, a 32 year old man, when admitted on September, 11, 1957, had had intermittent pain in the right loin for two to three months, which came on at any time of day or night and lasted for minutes or hours. Pain was steady and fairly sharp and was not made worse by sudden movement. None occurred on the left side. The pain was associated with shivering and sweating and by occasional vomiting.

From the outset there had been frequency with nocturia. There had been several attacks of haematuria during the illness, the most severe lasting five days. No clots were passed.

There had been cough for three months with occasional flecks of blood in the sputum in the past few weeks. Previously he had smoked up to 100 cigarettes a day, but recently only 5 to 10. There had been no breathlessness on exertion.

Patient had had a duodenal ulcer in 1945 but had had no abdominal pain in the past four years. Bowels were regular and there had been no diarrhoea.

For the past six days before admission patient had also complained of severe and persistent headaches, worse on moving the

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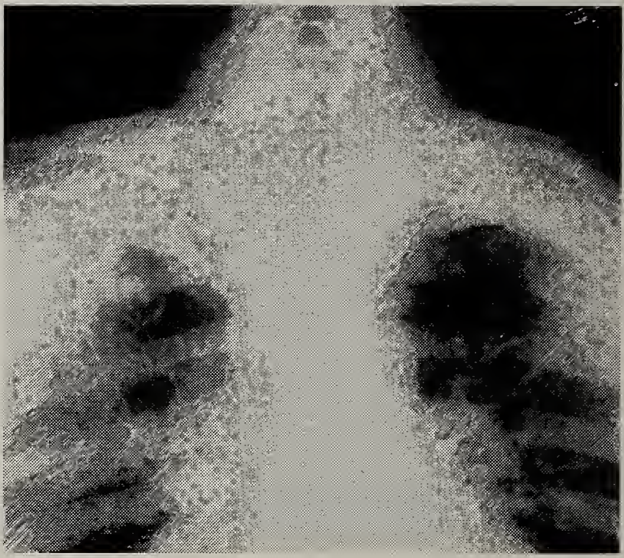
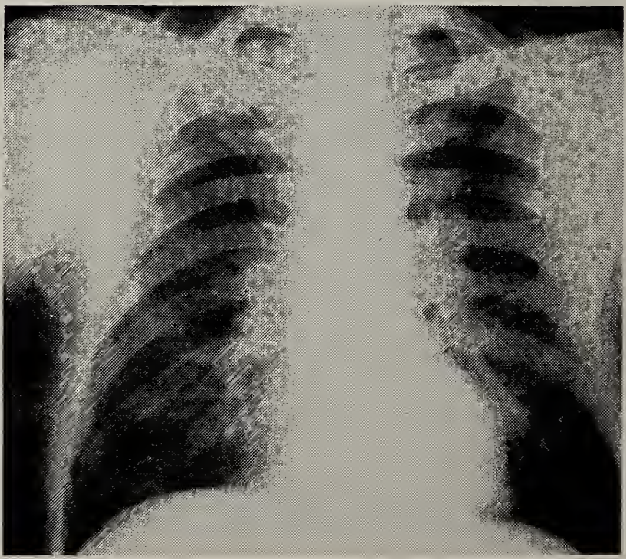


Chest X-ray Films



● The two cases presented here will be the basis for the Clinico-Pathological Conference to be held on Wednesday, April 20th at 3:00 p.m., at the Delaware Academy of Medicine. The Conference by Trans-Atlantic Link will be given by the Medical Society of Delaware and the Royal Society of Medicine, courtesy of Smith, Kline and French Laboratories.

MEDICAL SOCIETY OF DELAWARE

Initial Out-Patient Department Visit (August, 1947)

The patient, a 57 year old white man, was first seen in the Out-Patient Department because of 2-3 episodes of hemoptysis during the preceding month. He had noted exertional dizziness for about 2 years, and chronic recurrent substernal pain, unrelated to exercise and without arm or neck radiation.

The past medical history revealed two episodes of hematemesis and melena. During the first bleeding episode which occurred in 1940, a duodenal ulcer was visualized on an upper G.I. series. A posterior gastro-jejunostomy was performed. The second episode of bleeding was treated medically. Chronic, heavy alcohol ingestion was admitted.

A physical examination in the clinic showed a blood pressure of 140/80 and the examination was otherwise entirely normal except for acne rosacea and the healed abdominal scar. A chest x-ray was normal. Blood studies done at this time and subsequent laboratory data are recorded on the appended table.

On a reducing diet and phenobarbital taken throughout the next year, the patient remained essentially asymptomatic.

First Hospital Admission (August-Sept., 1948)

One year after his visit to clinic, the patient was admitted to the hospital because of melena of 4 days duration. His admis-

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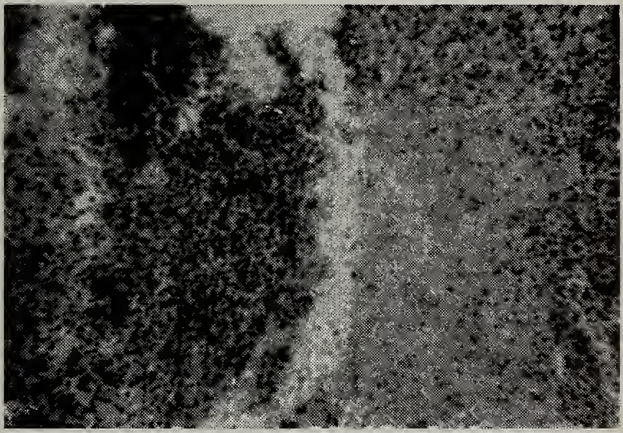


Figure 1

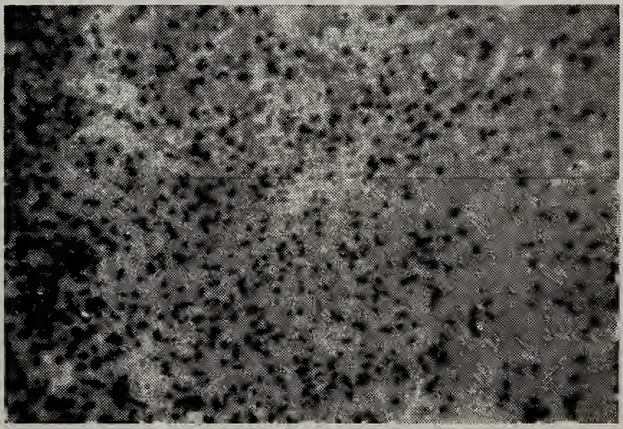
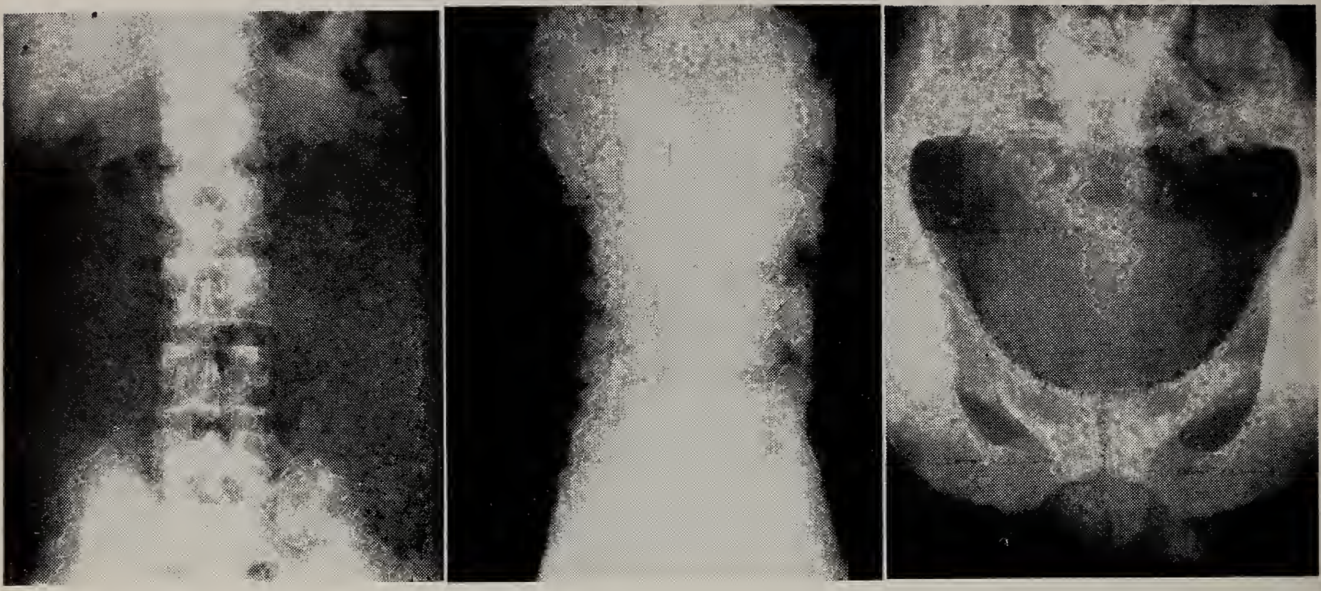


Figure 2



Film Sequences of Abdomen

head. He had also had bilateral earache for the past few days though never previously. There was no aural discharge, no photophobia and no diplopia. There were episodes of dizziness but not true vertigo. There was no paralysis and po paraesthesiae.

At examination he was found to be a hot ill-looking man with a temperature of 101°. Complexion was pale and muddy. There was no anaemia, jaundice, cyanosis or oedema. Pulse was 100, blood pressure 130/60. Jugular venous pressure not raised. Both ears showed mild redness of external auditory meatus but both drums were normal in appearance. The throat was red and there were several carious teeth. No abnormal signs were found in heart or lungs. Liver was not enlarged or tender, spleen was not felt. There was slight tenderness in the right iliac fossa and very marked tenderness in the right loin. Prostate felt normal without tenderness. Testes and epididymes showed no abnormality.

Nothing abnormal was found in the central nervous system at this stage.

Urine showed daily output of 2,500 ml., a trace of albumen and occasional red cells and pus cells. No casts were seen. Urine was mildly alkaline.

Blood tests showed Hb 15 gms. MCHC 31%, total white count 7000/cu.mm. with 76% neutrophils and 16% lymphocytes. Blood urea 34 mg.

Urine culture gave no growth in 48 hours.

X-ray of chest showed nothing above and behind R clavicle and at apex of left lung. There was some fine stippling scattered through middle and upper zones. X-ray of abdomen showed some calcification overlying upper pole of right kidney possibly due to old tubercle.

Excretion pyelogram showed good excretion on both sides. Left kidney appears normal. In right kidney the previously reported calcifications are seen to be associated with upper pole calyces and are probably old tubercle.

Course in Hospital

Fever persisted for first two weeks irregularly between 100° and 102°F. Initial treatment was with sulphadimidine and potassium citrate. Pethidine was needed for the pain. Treatment changed after four days to penicillin and tetracycline. By 18 September, 7 days after admission, patient was becoming distant mentally and drowsy in the evening. There was slight suggestion of neck stiffness. By the following day there was worse headache, irritability, photophobia, increased drowsiness and he was only rational at intervals, grinning vacuously at times. No definite neck retraction.

Continued on page 126

sion physical examination was normal except for acne and the abdominal scar which was previously noted. The liver and spleen were not palpable and no mention was made of any remarkable lymphadenopathy. During this admission, an upper G.I. survey was interpreted as showing no evidence of esophageal varices, gastric malignancy or ulcer. There was marked hypertrophy of the gastric rugae, duodenal and jejunal mucosal folds. No ulcer of the jejunal stoma was visualized. A barium enema was normal. A chest x-ray revealed a small amount of cardiac enlargement in its transverse diameter with some hilar congestion, but there was no evidence of enlarged hilar lymph-nodes or any parenchymal infiltration.

Treatment included blood transfusions and a Sippy regimen. Laboratory data are summarized on the appended chart. A bone marrow aspirate was interpreted as being compatible with a leukemoid hyperplasia.

Gastroscopic examination one month after discharge demonstrated only a normal appearing gastro-jejunostomy without evidence of ulcer or any other pathology.

Second Hospital Admission (March-May, 1949)

The patient remained well until 6 months later when, after several highballs and a heavy meal, he developed epigastric pain and vomiting. Shortly thereafter, he began to pass tarry stools. He continued to note melena for several days before admission. At the time of admission, he had a tachycardia of 130, a respiratory rate of 20 and was sweating profusely. Blood pressure was 120/80. Initial therapy included blood transfusions and a Sippy #1 regimen. An electrocardiogram demonstrated inverted T waves in leads 1 and 2 and in the left precordial leads, the interpretation being left heart strain. Three weeks after admission a subtotal gastrectomy with revision of the previous gastro-enterostomy was performed. The resected specimen showed gastritis and hyperplastic epithelium. Hematologic data during this admission are appended.

Third Hospital Admission (October, 1949)

Following discharge in May, 1949, he remained well until October when he developed a tender, hot nodule in his left axilla. Physical examination at this time demonstrated, in addition, many inguinal nodes and one right axillary node. The splenic tip was palpated for the first time. When excision biopsy of the left axillary node was performed, continuous oozing over the next several hours necessitated blood transfusion. During this admission, a soft systolic mitral murmur was mentioned for the first time. The microscopic examination of the resected lymph node revealed multiple small abscesses. The pathologic diagnosis was "'suppurative lymphadenitis." See Figures 1 and 2.

One month later, an eroded, inflamed, hemorrhagic ulcer developed on the patient's posterior pharyngeal wall. Therapy was parenteral penicillin and after one week this ulcer disappeared. A bone marrow biopsy of the sternum was performed at this time and was interpreted as "megakaryocytic hyperplasia and fibrosis compatible with chronic granulocytic leukemia."

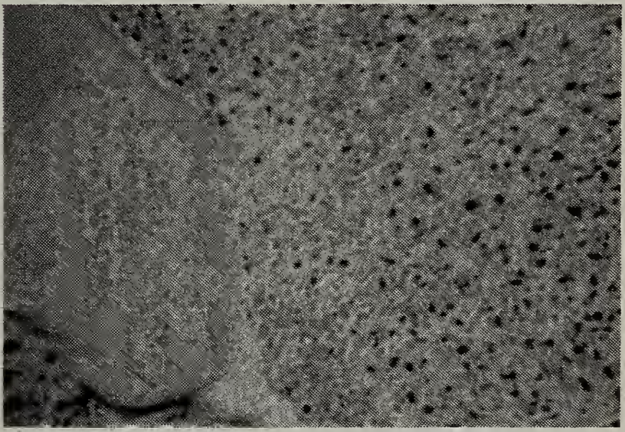
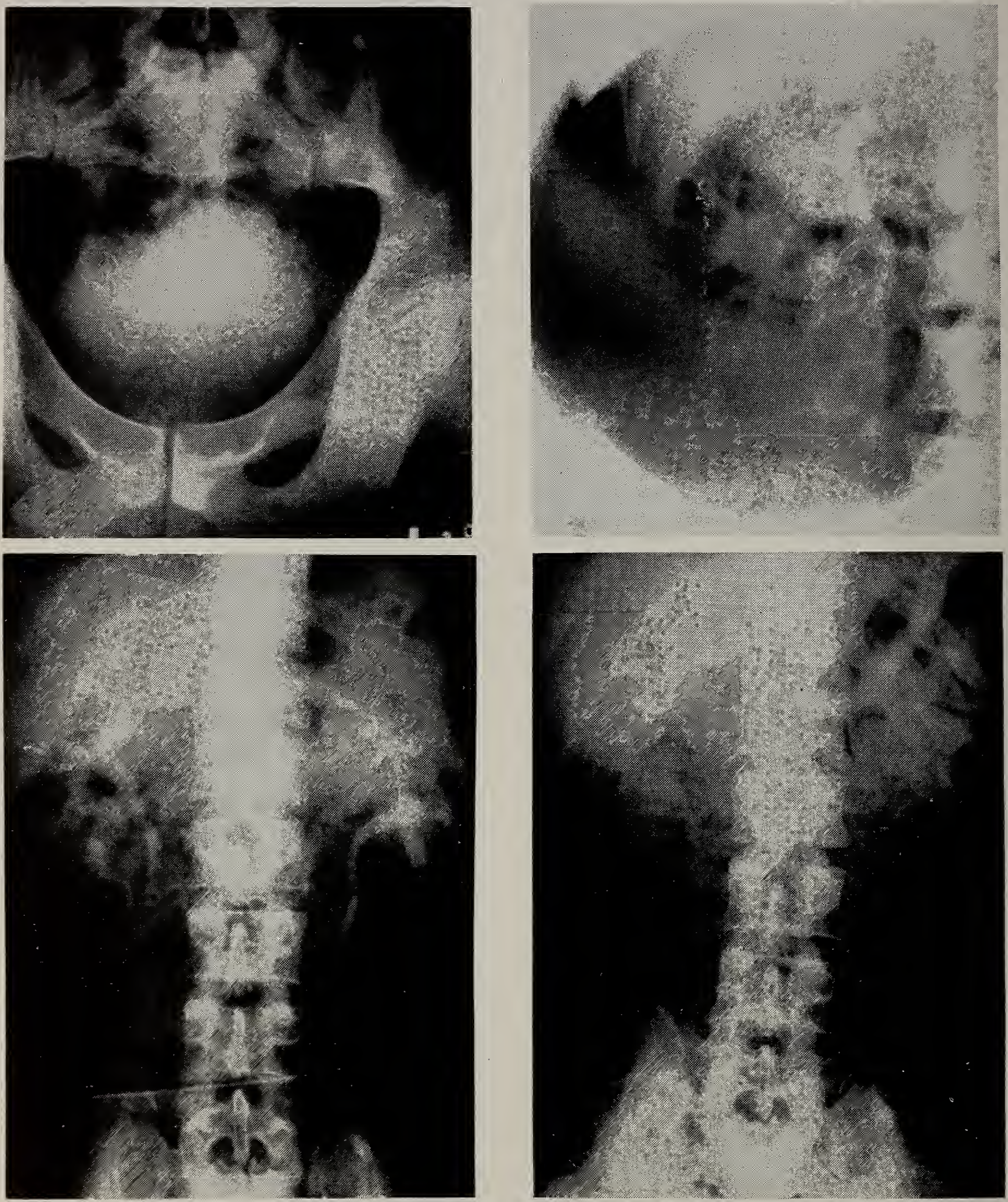


Figure 3

During the following 6 months, the axillary lymphadenopathy regressed. However, hepatomegaly became apparent as well as marked splenomegaly, and the lower pole of the spleen now reached to the pelvic brim. The chest x-ray was normal except for slight elevation of the left disphragmatic dome. See Figure 3.

Continued on page 127



FILM SEQUENCES FOR EXCRETION PYELOGRAM

Reflexes all reduced. Plantars flexor, Kernig's sign negative. Fundi — no papilloedema and no choroidal tubercles.

Lumbar puncture — fluid slightly turbid and yellow. Pressure 150 mm. rising only slowly with jugular compression. 150 cells per cu. mm. with 96% lymphocytes. Chloride 90mEq. glucose 50mg. Protein 1.79gm. Pandy plus 4, Lange 000 000 000. Culture no growth after 48 hours. Later CSF showed glucose 78 and 54 mg. The level of consciousness varied considerably during the next five days.

Continued on page 128

APPENDED CHART — CASE PRESENTED BY MEDICAL SOCIETY OF DELAWARE

		1st Admission				2nd Admission		3rd Admis.		Final Admission	
	8/47	8/15/48	8/17/48	8/19/48	9/5/48	3/29/49	5/7/49	10/49	7/50	1/15/51	2/2/51
HBG	13.7	6.2	8.8	9.6	11.1	9.3	11.2	14.2	8.1	7.8	12.4
WBC	51,500	31,900	23,200	16,600	19,300	31,200	14,900	7400	24,800	3400	3700
Poly. seg	66	69	60	73	79	80	82		9	36	4
Poly. non seg	3	3	9	9	1	3	—	NO	3	14	24
myelocytes	—	4	7	4	—	2	—		—	2	40
metamyelo	—	—	1	—	—	—	—	DIFF	—	8	—
blasts	—	—	—	—	—	occ.	—		53	20	16
lymphocytes	27	12	23	1	13	7	14		16	12	—
monocytes	3	2	—	2	1	3	—		1	—	4
eosinophils	1	10	—	11	2	0	—		2	—	4
basophils	—	—	—	—	4	5	4		16	8	8
Platelets		945,000		872,000	506,000	increased				125,000	30,000
RETICS			1.9							3.4	
COOMBS										negative	
VEN.COAG.TIME		5 min.									
BSP		0%									
URIC ACID		2.9									
BUN		6									
BLOOD SUGAR						21	15			11	
TOT. PROT.		6.10				6.23				119	
ALB.		4.40				3.63				6.30	
GLOB.		1.70				2.60				2.95	
CEPH. FLOC.		0								3.35	

C-P CASE — Medical Society of Delaware

Continued from page 127

In the fall of 1950, a course of x-ray therapy to the spleen was begun because of overlying pain and tenderness. After 1200 r in air in a period of 12 days, therapy was discontinued because of a decrease of WBC from over 20,000 to 5,000. However, great symptomatic relief was obtained and the size of the spleen decreased one-half. Over the next 3-4 months, occasional blood transfusions were administered for symptoms of anemia. Overall weight loss of 40 pounds had occurred since the patient's first visit in 1947.

Final Hospital Admission (Jan.-Feb., 1951)

The patient was readmitted in January of 1951 because of progressive weakness and increasing dizziness. Physical examination on admission revealed pallor of all mucous membranes; fever of 102°F.; pulse rate 80; moist rales at both bases; a soft systolic murmur at both mitral and aortic areas; the spleen filled the entire left abdomen; the liver edge extended 3 fingerbreadths below the right costal margin and was tender. The chest x-ray was essentially normal. The patient's fever increased to 103°F. the second hospital day. From this day, he received a daily 8 hour infusion of 10 mg of ACTH and 1000 cc of 5% glucose in water. The daily infusion of ACTH was continued for two weeks. During this time, his temperature decreased until he became afebrile. The day before the ACTH was discontinued, his fever recurred and from then on until his death 3 days later, he manifested intermittent fever to a high of 103°F. A blood culture obtained the day after admission demonstrated no growth in 15 days. Despite supportive therapy, including transfusions of red cells and whole blood and penicillin, he became progressively weaker and expired approximately 3 weeks after his admission.

C-P CASE — Royal Society of Medicine

Continued from page 126

He became incontinent. Neck stiffness became more marked. Kernig's sign positive but no localising neurological signs. Fundi remained normal. On 23rd September a lumbar puncture failed and a block was suspected.

25th September, burr holes were made for a ventricular tap. Dura was found to be not under tension and brain substance was shrunk away from dura. Ventricle fluid was not under pressure; it was clear. Ventricles seemed enlarged.

Following operation temperature fell, but consciousness continued to fluctuate.

26th September; developed gross nystagmus in all directions and diplopia. Reflexes becoming less brisk. Gradually became stuperose. Right pupil now larger than left. Fundi still clear. Plantar reflexes still flexor.

On 2nd October, breathing became rapid, gasping and irregular. Widespread crepitations developed in both lower zones. Temperature became subnormal. Urine showed no change — still a few red cells and pus cells.

On 3rd October, breathing very rapid and irregular. Patient unable to swallow, and died.

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ANNUAL MEETING, Medical Society of Delaware

Rehoboth, Delaware September 8, 9, 10, 1960

Editorials

TRANS-ATLANTIC C P C

It is our privilege to be the first state society to participate in a trans-Atlantic clinico-pathological conference. Elsewhere in this issue of the *Journal* are the protocols of the British and American cases. The British case will be discussed by a panel consisting of Drs. Barrett Heckler, moderator, Dewey A. Nelson, Leonard Lang, and Lemuel McGee. The Delaware case will be discussed by a panel at the Royal Society of Medicine. The entire program will be heard by means of trans-Atlantic telephone. The program is sponsored by Smith, Kline, and French.

This is one meeting that will begin promptly—3:00 p.m. on Wednesday, April 20th. By the same token, it will end at 4:00 p.m. No one should miss another "first" in Delaware.

THE FIRST TUESDAY AFTER THE FIRST MONDAY

Election year hysteria is a disease that manifests itself by numerous symptoms. Its etiology is the ceaseless struggle between the aspirant and the incumbent. Its symptoms are varied and bizarre. Examination reveals a lesion, deep seated and malignant, resulting from a selfish drive to occupy the limelight, regardless of the means. The prognosis is guarded—this chronic disease is subject to exacerbations and remissions, usually recurring in four year cycles.

One of the current epidemics is an attack upon our colleagues in the pharmaceutical industry. Some of the charges aimed at this industry undoubtedly are based upon fact; some drug companies no doubt have standards lower than those of others. Most epidemics can be far reaching and devastating and, unfortunately, the good must suffer with the bad.

In this particular epidemic progress reports are eagerly awaited by the press who, in turn, relay the news to an excited public. At times statements are made behind the scenes that never reach the press. On January 22, 1960, before the Senate of the United States, Senator E. M. Dirksen of Illinois felt duty bound to his conscience to straighten out the record and make an objection to the manner in which the investigation of the drug industry was being carried out plus the "fantastic and incredible" news headlines and stories resulting from these hearings.

It is unfortunate that Senator Dirksen's remarks were not noted by the press.

Unfortunately, one rotten apple can spoil the entire barrel but things are not so bad as they have been made to appear. The majority of the members of the drug industry are constantly striving to do a good job in helping us to do our best for our patients. If the defects claimed by certain lawmakers do exist in the industry, there are more rapid and effective means of obtaining a cure—but means not nearly so helpful to the accusers in this election year of 1960.

Studies have been conducted into the waste, duplication, and general inefficiency of the medical services within the Federal Government. The Hoover Commission has made specific recommendations whereby these abuses could be minimized.

The sincere desire of a lawmaker to protect the public against unscrupulous profiteers is indeed commendable. It would make more sense to most of us, however, if someone would investigate the spending of our tax dollars tell us why the recommendations of the Hoover Commission have been ignored.

In Brief

Cystic Fibrosis Research

The University of Delaware's Research Foundation has been investigating the structure of mucous materials through its chemistry department, and recently has expanded this study to include the nature and consistency of human respiratory mucous secretions. Largely supported by the National Cystic Fibrosis Research Foundation, this work may be a significant step forward in understanding this disease which has the third highest mortality rate in children (after accidents and leukemia) and is recognized as being congenital in origin and related to the malfunction of the exocrine glands, according to Dr. Harold Kwarts, associate professor of Chemistry at the University.

Government Interest Alerts Health Insurers

Rapid strides are being made by health insurance companies to provide medical, surgical and hospital care coverage for people aged 65 and over. Robert R. Neal, General Manager of the Health Insurance Association of America, speaking in Washington, stressed that many health insurance companies are gearing their efforts to meet the need for better coverage at a cost which the public can pay. The establishment of federal administrative machinery to operate health insurance programs could be the forerunner of government intervention in fields of insurance, said Mr. Neal. The creation of the Senate Labor Committee's Sub-Committee on Problems Aging and the Aged, and the public hearings held this year by that group; the introduction of the Forand Bill, and congressional authorization of the White House Conference on Aging are all matters of concern to the insurance business, he added.

Less of the Dollar

Physicians received 22.6% less of the medical care dollar spent by the average American family in 1958 than in 1938, a drop from 31 to 24 cents in 20 years. A breakdown issued by the Health Information Service showed a sharp increase of 42% (in the amount) spent for all medical care in the past five years. The analysis for 1957-58 showed that physicians' services made up 26% of health costs; hospitals, 31%; drugs, medications and appliances, 27%; dental services, 10% and miscellaneous (special nursing, medical aids etc.), 6%.

What Does It Prove?

Twice as much money is being spent for recreation, alcoholic beverages and tobacco by the American public as for medical care. As reported by the Health Insurance Institute, one dollar out of the estimated 18 dollars the public spends for its personal needs goes for medical care and two dollars out of the eighteen goes for the aforementional pleasures. Perhaps this is a happy balance and indicates that we are a healthy nation on the whole.

Top Officers Re-elected

At a quarterly meeting of the Memorial Hospital's Board of Directors, Edward S. Parvis, M.D., and J. William Abbiss, M.D., were re-elected president and vice--president respectively of the executive committee, and Martin B. Pennington, M.D., was elected secretary-treasurer.

The Dope on Dope

Delaware must claim only 17 of the nation's registered drug addicts as residents. This was reported by H. J. Anslinger, United States Commissioner of Narcotics, in his testimony before the House Appropriations Committee. Only one new dope addict was registered in the state during 1959, as compared to 13 in 1958; three narcotic violations out of the nation's 1,649 were reported in Delaware during 1959, none being violations of the Federal Marijuana Statutes.

Attention, Medical Women

An interesting program is being planned for the Pan American Medical Women's Alliance at its Seventh Congress which will be held in San Juan, Puerto Rico, June 3-8, 1960 at the Condado Hotel. Applicants for membership in this Alliance should be made to Dr. Eva Cutright, Treasurer, 458 Beall Avenue, Wooster, Ohio.

Don't Look Now!

A prediction that cancer will be almost completely controlled within our lifetime through research in the biochemistry of the disease was made by John F. W. King, M.D., previously medical director of the Delaware Division of the American Cancer Society and now service director of the medical and scientfiic department of the National Society. For the cigarette smoker, Dr. King cited the fact that most chemical treatment of lung cancer is of limited effectiveness, that the control rests in its *prevention* — which many people are ignoring by looking the other way.

The Top Four

Figures released by the Public Health Service's National Office of Vital Statistics show heart disease, cancer, strokes and accidents accounting for 71% of all deaths in 1958. The number and rates per 100,000 population for the four leading causes of death are:

	Number	*Rate*
Heart disease	637,246	367.9
Malignant neoplasms, or cancer	254,426	146.9
Vascular lesions (chiefly strokes)	190,758	110.1
Accidents, all forms	90,604	52.3

Chiefly as a result of the influenza epidemic, the toll of deaths from influenza and pneumonia remained high in 1958 — 57,439 deaths, or 33.2 per 100,000 population.

New Director

Dr. Marie Lehner, obstetrician-gynecologist, will replace Dr. Jack Sabloff as Director of Maternal, Child Health and Crippled Children's Services for the State Board of Health. Dr. Lehner, graduate of Woman's Medical College of Pennsylvania, is from San Francisco.

An Exacting Art

Plastic surgery to correct the effects of cancer is increasing to include almost half of all plastic operations performed at Johns Hopkins Hospital, Baltimore. About one quarter of the operations are to repair deformed or injured hands; only 20% are classified as cosmetic surgery. Dr. Milton Edgerton, Johns Hopkins surgeon, feels that plastic surgery is still widely misunderstood, not only by the public but within the medical profession. "No one doubts the value of plastic surgery for an obvious deformity, but many fail to understand the importance of correcting a minor deformity," he added. "The purpose is not and should not be self indulgence, rather than elmination of self concern."

OUTSTANDING ACHIEVEMENTS IN MEDICINE DURING 1959

The deans of 84 medical schools, polled by the American Medical Association on the greatest medical advancements during the past year, nearly all agreed that intensive medical investigation in biochemical genetics has shed a new light on the nature of life and the future of man as a species. Dr. William S. Stone, Dean of the University of Maryland Medical School, said, "the biggest single achievement in the field of medicine is the increase in our knowledge of the chemistry of genetics."

Dr. Severo Ochoa of the New York College of Medicine and Dr. Arthur Kornberg of Stanford University—Nobel Prize winners in medicine for 1959—have opened avenues in the treatment of a wide spectrum of disease with their discoveries related to the biological synthesis of compounds RNA and DNA.

DNA is acknowledged to be the chemical that, in most living things, passes hereditary characteristics from one generation to the next.

RNA thought to pass on hereditary traits, is a key substance in the production of protein and is found in some viruses including those which cause poliomyelitis.

These chemicals, under study for years, will have more far-reaching affect on future biological concepts than any other single advance this past year, say the deans.

Specific medical investigations mentioned by the deans which are now being carried on in the field of biochemical genetics include:

. . . the phenomenon, transduction, through which a virus can carry genetic material from one cell to another of significance in transplantation of organs.

. . . the role, if any, of viruses in leukemia.

. . . the function of enzymes in diseases. Epilepsy and multiple sclerosis are thought to be of enzymatic and metobolic origin.

. . . study of certain diseases in which, because of hereditary abnormality, the patient fails to manufacture enzymes, or manufactures an abnormal enzyme.

. . . the possibility of moving heritable trait vehicles from one cell to another.

. . . the role of genetic analysis in the understanding of cancer.

. . . the role of genetic influences of such diseases as hypertension, coronary ailments, schizophrenia and diabetes.

. . . the possibility of making synthetic substances with enzymatic activity and using these artificial enzymes to control diseases resulting from abnormal or deficient enzymes.

Dean Stafford L. Warren of the University of California Medical Center, noted the better understanding of the biochemical inhibition of nerve impulses which was achieved in 1959 and added that it is now possible to trace the learning process on an EEG. This may eventually lead to a better understanding of mental disease and bring about better methods of treatment.

In the opinion of Dr. H. Hunter, Dean of the University of Virginia School of Medicine, research in chromosomes has been the outstanding achievement in medicine in 1959. He referred particularly to the findings of British investigators that irregular numbers of chromosomes in living cells are responsible for such conditions as mongoloid idiocy, abnormalities of the sexual organs, and, possibly, leukemia.

Dr. Doane of Ohio State and Dr. Ralph E. Snyder of New York Medical College, believe that the development of synthetic penicillin was a great '59 achievement and will "open up a whole new era of possibilities in the attack on resistant organisms."

Contributors Column

Arthur Ullman, M.D. graduated from State University of New York College of Medicine after receiving a masters degree in History and Zoology from Duke University. After urology residencies in three New York City hospitals, Dr. Ullman worked under Dr. Frank Hamm doing research on ureteral regeneration, bladder replacement, carcinogenic agents affecting bladder mucosa and post cystoscopy bacteremia.

⁂

Howard J. Shear received an M.A. and Ph.D. in psychology at the University of Texas in 1953 and 1955 respectively. From 1953-55, he worked as a counseling psychologist at the University counseling center as a Hogg Foundation Mental Hygiene Fellow. Dr. Shear interned in clinical psychology at the Coatesville VAH and has been a staff member at the Wilmington Veterans Administration Hospital since 1956. He is a member of the American Psychological Association and the American Academy of Psychotherapists.

⁂

Domenic A. Rovito, M.D., graduate of Royal University of Rome, Italy '34, served a rotating internship at St. Joseph's Hospital, Lancaster, Pa., and was Senior Psychiatrist at Danville State Hospital, Pa. from 1936-42. For the next 8 years he was in private practice in Philadelphia before accepting a post as full-time psychiatrist at the Veterans Administration Hospital, Wilmington. Dr. Rovito has been Chief of Neuropsychiatry since 1956 and was certified by the American Board of Psychiatry in 1956.

Donald G. McHale, graduate of Jefferson Medical College, '35, joined the Veterans Administration Hospital in Wilmington in 1948 and has been associated with the Department of Surgery to date. Dr. McHale served for 7 years in the surgical service during World War II.

⁂

Walker Stamps, M.D., a North Carolinian, Harvard Medical School, '37, interned at Bellevue Hospital, New York City and then served in the African and European theaters from 1940-1945 as Lt. Colonel. Previous to joining the Veterans Administration Hospital in 1957, he was in private practice in Jacksonville, Florida.

⁂

Marvin L. Bobb, M.D., Hahnemann '51 and Oxford University, has recently begun practicing internal medicine in Wilmington. He had done basic research in biochemistry in the laboratories of two Nobel Laureates following the completion of his residency in internal medicine at the Montefiore Hospital in New York. Dr. Bobb is a native of Claymont, Delaware.

⁂

Martin M. Mandel, M.D., Jefferson Medical College '47, served his internship at the Jefferson Hospital in Philadelphia and a residency in neurology at Jefferson Medical College, where he received a hospital appointment as Assistant in Neurology in 1949. Dr. Mandel was certified by the American Board of Neurology in 1959.

NEW SOCIETY IN DELAWARE

The Delaware Society of Internal Medicine was founded at the Delaware Academy of Medicine February 16. This organization consists of physicians who practice Internal Medicine and will be a component organization of the American Society of Internal Medicine

The purpose of this organization is to study the scientific economic, social, and public aspects of the practice of internal medicine supplementing the aims and activities of the American College of Physicians

The officers for 1960 were elected and are as follows:

Herbert M. Baganz, M.D. — President
Lemuel C. McGee, M.D. — Counselor
John J. Egan, M.D. — President-Elect
A. Henry Clagett, Jr., M.D. — Counselor
Bernadine Paulshock, M.D. — Secretary-Treasurer

Auxiliary Affairs

WHY A MEDICAL AUXILIARY?

The best way to answer this question is to tell you some of the projects and a few of the historical facts of the Auxiliary to the Medical Society of the State of Delaware.

In 1929 and 1930, members of the Medical Society of Delaware suggested to several of the doctors' wives that an auxiliary to the Medical Society be started in Delaware. Mrs. Harold Springer was the chairman of the group until the organization was accomplished, and Mrs. Robert W. Tomlinson was elected first president.

Previously, in 1922, the idea of a National Auxiliary to the American Medical Association had originated with the Woman's Auxiliary to the State Medical Association of Texas. That year, the following resolution was introduced and adopted by the House of Delegates of the AMA:

> "*To organize a Woman's Auxiliary to the American Medical Association, the object of which shall be, 'to extend the aims of the medical profession through the wives of doctors to the various women's organizations which look to the advancement in health and education, to assist in entertainment at all medical conventions and to promote acquaintance among doctors' families so that closer fellowship may exist.'*"

Naturally, the basic policies of the National Auxiliary have always been the policies of our Delaware State Auxiliary, and just as the National Auxiliary secures the approval of its Advisory Council before projects have been incorporated in the Auxiliary program, so our State Auxiliary looks to its Advisory Board for approval of any new project.

VNA Project

One of the projects originating in the beginning years of our Delaware Auxiliary, and still one of our current activities, is the furnishing of Visiting Nurse Association supplies of babies layettes, nurses' aprons, and other articles requested by the VNA. The purchase of the materials and the making of hundreds and hundreds of these articles through the years has been a much appreciated contribution to the Visiting Nurse Association.

AMEF Project

Our top priority project at the present time, in line with the priority project of the National Auxiliary, is the American Medical Education Fund. Our chairman and her committee are busily engaged in many plans for raising funds for the AMEF.

Last year the Woman's Auxiliary to the American Medical Association contributed

$140,500 to the AMEF. This represented the funds raised by each of the State Auxiliaries and was 11 per cent of the total amount given to the Medical Schools by AMEF.

Paramedical Careers

The nursing scholarship program has been broadened to include more health careers, and it is now called the Paramedical Careers Committee. This year, in addition to scholarships in nursing, our auxiliary has included scholarships in laboratory technology.

Since the program in nursing scholarships originated in 1950, our Delaware Auxiliary has awarded 30 scholarships in nursing and raised the sum of $6,500 to carry on this project.

The committee has also screened applicants for the Rotary Club scholarships and awarded 553 Grants in Aid and also three nursing students are being financed by the Zeta Chapter of Beta Sigma Phi Sorority.

The Problem of the Aged in Delaware

The Committee on Legislation has been preparing a report on the survey, "What is Being Done for the Aged in Delaware." The request for this report came from the National Auxiliary and is being prepared by each of the State Auxiliaries.

The objectives of this Legislative Committee are:

To assist the medical profession in the promotion of legislation that will advance the type of medical care beneficial to the health of the people.

To assist the medical profession to oppose legislation with medical implications detrimental to the health of the people.

To inform Auxiliary members on legislative matters.

To acquaint the public with the views of the medical profession on legislation with medical implications.

Dr. Louis Orr stated last year, *"To me, one of the greatest functions that the Woman's Auxiliary can perform is to act as an educational force for medicine."*

He urged the Auxiliary to assume the task of launching an educational program and tell the full story about the so-called free hospital and medical care for the retired beneficiaries of the Social Security Act.

Two-fold Program

This task has two points: first, details of the dangers that legislation of this type can bring; and second, an up-to-the-minute report on what the free enterprise system is doing to improve the health care of the aged.

This two-fold program can be spread throughout every United States community by women of the Auxiliary. The problem of the aging is clearly the problem of the physician today, and as such is also the problem of every Medical Auxiliary member.

Mental Health Activities

The Committee on Mental Health has a program of work in the mental hospitals of the State which is carried out each week. Gifts to the library and other areas and donations of time to the various departments are made by many members of our Medical Auxiliary.

These activities, plus any timely requirement of the Community Service Committee, the Civil Defense Committee or the Safety Committee, make up most of the work of the Auxiliary.

The National Auxiliary with a total of over 78,000 members at present has had national recognition many times in the past years with representation at important national meetings on health problems and ideas, and the Auxiliary aims to take as active and conscientious a part in the future as it has in the past.

Mrs. Sylvester W. Rennie
Chairman of Legislative Committee

MAJOR MEDICAL MEETINGS IN DELAWARE

Standing Schedule

Beebe Hospital	General Staff	2nd Friday	Monthly
Delaware Hospital	General Staff	2nd Tuesday	Feb., May, Sept., Dec.
Kent General Hospital	General Staff	3rd Tuesday	Monthly
Memorial Hospital (Wilmington)	General Staff	2nd Tuesday	Jan., March, June, Oct.
Milford Memorial Hospital	General Staff	2nd and last Tuesdays	Monthly
Nanticoke Memorial Hospital	General Staff	1st Thursday	Monthly
St. Francis Hospital	General Staff	4th Tuesday 1st Tuesday	March, May, Oct. December
Wilmington General Hospital	General Staff	4th Tuesday	Jan., April, Sept., Nov.

Kent County Medical Society	Monthly Meeting	3rd Tuesday	September - June
New Castle County Medical Society	Monthly Meeting	3rd Tuesday	September - June
Sussex County Medical Society	Monthly Meeting	2nd Thursday	September - June

Delaware Academy of General Practice	Monthly Meeting	1st Tuesday	September - June
Delaware Pathology Society	Weekly Meeting	Each Friday	

Special Schedule

American Academy of General Practice	Annual Meeting	Philadelphia, Pa.	March 19-24, 1960
Medical Society of Delaware The Royal Society of Medicine	Trans-Atlantic Clinico-Pathological Conference	Delaware Academy of Medicine	April 20, 1960
Delaware Academy of General Practice	Diseases of the Chest	Emily P. Bissell Hospital	April 23, 1960
	Open House at the Virus Laboratory of Delaware — Tallman Bldg.		
Medical Society of Delaware	Annual Meeting	Rehoboth, Delaware	September 8, 9, 10, 1960
Delaware Academy of General Practice	Annual Meeting	Delaware Academy of Medicine	December 9, 10, 1960

TWO-WAY RADIO CONFERENCES FOR THE COMING MONTH

Sponsorship: *Medical Society of Delaware, Pennsylvania Hospital, Smith Kline & French Laboratories.*

Date *Topic and Faculty*

Mar. 29—"Differential Diagnosis and Treatment of Obstructive Jaundice." W. Paul Havens, M.D., Physician to Pennsylvania Hospital and Head, Dept. of Infectious Diseases.

Apr. 5—"Resuscitation of the Newborn." Thomas R. Boggs, Jr., M.D., Pediatrician to Pennsylvania Hospital and Head, Dept. of Pediatrics.

Apr. 12—"Diagnosis and Treatment of Pruritus Ani." F. Dana Law, M.D., Assistant Surgeon, Pennsylvania Hospital.

Apr. 19—"Immunization Routines in Children." Edward M. Sewell, M.D., Instructor in Pediatrics, Univ. of Penna. School of Medicine.

Apr. 26—"Cardiac Arrhythmias, Recognition and Treatment." Frank R. Boyer, M.D., Assistant Cardiologist, Pennsylvania Hospital.

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This volume is dedicated to the memory of

Dr. James G. Spackman by his former students.

MEMORIAL HOSPITAL ISSUE

1889-1959

James Guie Spackman, M.D.

● **This address was delivered on the occasion of the presentation of Dr. Spackman's portrait to the Memorial Hospital by the Nurses' Alumnae Association. Dr. Pierson is successor to Dr. Spackman as Director, Department of Surgery, Memorial Hospital, Wilmington, Delaware.**

John C. Pierson, M.D.

Your chairman was very kind in asking me to contribute some thoughts to this fine testimonial that you have prepared in honor of Dr. Spackman. I frankly confess, however, to a very real sense of inadequacy for such an assignment. In accepting her invitation, I only hope that by reason of my long and intimate association with Dr. Spackman, I may be able to recall to you circumstances in his life and work at your hospital that will make him seem much more than a revered name or a legendary figure out of the dim past.

That something unique and outstanding characterized the life of Dr. Spackman is attested to by the very fact that we are meeting here tonight and that the Nurses' Alumnae Association was prompted to present a portrait in his honor to the hospital that he served with such distinction. No words of mine can add to the glory of his achievements or intensify the impact that his work and his personality exerted upon the life of the Memorial Hospital and the community it serves.

Perhaps if I can sketch briefly some of the changes that came about during his active years in the hospital you may sense the kind of person he was and appreciate the magnitude of his accomplishments.

When he arrived in Wilmington in 1915 to devote himself exclusively to the practice of surgery he was immediately confronted with obstacles and frustrations that can hardly be envisaged by most of you. In the first place, while he was hardly looked upon as persona non grata in a literal sense, most of the doctors at the hospital felt that they were "doing all right" under the system in vogue when he first came into the picture, viz., to call one of their favorite surgeons from Philadelphia for practically all of their elective cases and even for most of their emergencies. Indeed, it was not until after his return from military service in 1919 that this subtle prejudice was overcome. Almost suddenly, it seemed, a combination of factors broke down all pre-existing barriers. His twenty-four-hour-a-day availability, added maturity, obvious superiority as a surgeon, and a personality, not only magnetic, but one that inspired confidence in both patients and doctors, were not to be denied. The hero of our epic had truly come into his own.

To say that he had now arrived is not to imply that no problems remained. Even at this stage (1919) he was handicapped by a woeful lack of basic facilities so necessary for safe and successful surgery. A single interne covered the entire hospital—maternity, accident ward, operating room, laboratory, bed patients. Until now, anaesthetics (chloroform or ether) were being administered by the medical man whose patient was being operated upon. X-ray services were supplied in the simplest form and on a part-time basis by whatever general practitioner showed a particular interest in the field. There was no trained laboratory technician and no pathologist nearer than Philadelphia.

Such deficiencies might have been taken in stride by a person of different make-up; either he would have settled into the pattern already well established—rolling with the punch day after day—or else he would have become sufficiently discouraged to pull up stakes and seek the realization of his dreams and his ambitions in a more propitious atmosphere. Neither of these alternatives would have been in character for the person we are honoring tonight.

Toward the end of 1919 a physician-anaesthetist (Dr. Lotz) had become a part of the operating room team—the first anaesthesia coverage of this type to be introduced in Wilmington. About this same time, Dr. Washburn became director of the hospital laboratory, and, through him, Miss Frances Pennypacker was engaged as full-time technician. She served in this capacity through many fruitful years, and, I am sure, is still remembered by many of you for her warmth of personality and her selfless devotion to her job.

By 1922, Dr. Spackman's practice had reached such proportions that he found it necessary to employ a full-time first assistant (Dr. Wallace Johnson). The expedient, now so natural and common-place, was at that time new to medical practice in Wilmington, and by some was even looked upon as a kind of stunt or form of showmanship. Rather, as subsequent events were destined to prove, this particular decision was motivated by two dominant elements that became more and more evident as his professional life unfolded. One was a painstaking attention to the minutest detail where his patients' needs were concerned; the other was a latent but growing compulsion to teach—to pass on to others the things he had already learned. Surely, in responding to both of these inner demands, he came to find much of his true raison d'etre and his greatest satisfaction as a doctor and surgeon.

Gradually, and with singular success, a well-rounded team was being put on the field at what was by this time commonly referred to as Dr. Spackman's hospital. In 1926, Dr. Allen became director of the X-ray Department. His importance in thus closing a large gap in the complete care of the patient cannot be overstated, and I am sure that no one appreciated his indispensability more than did Dr. Spackman himself.

There remained, however, a kind of makeshift arrangement so far as the important field of pathology was concerned. It was still necessary to send surgical specimens to Philadelphia and then await a telephone or special-delivery-letter report from Dr. Sappington, chief of the pathology department at Hahnemann Hospital. It was not until Dr. D. M. Gay was engaged to fill this role at our hospital that immediate tissue diagnosis (frozen section biopsy) was made available. Having myself lived through the period of off-the-premises laboratory service and then enjoyed the luxury of a competent on-the-scene pathologist, it was easy to share Dr. Spackman's delight at having Dr. Gay added to the team.

It is said that necessity is the mother of invention; and, in that sense, perhaps, the lack of a full-time pathologist for so long was a fortuitous circumstance in the career of Dr. Spackman. He was compelled to depend much more upon his own personal resources, so that the art of clinical diagnosis of cancer, especially breast cancer, became an added talent in his already rich store of assets. His experience in this particular field and his aggressive approach toward all tumor problems soon resulted in his enjoying almost a monopoly in this type of surgical practice. "Nothing succeeds like success" is more than a familiar aphorism—its truth was abundantly illustrated in the case of Dr. Spackman. He found himself confronted not only with a snowballing volume of patients, but with diagnostic and operative problems of increasing magnitude.

One misses the significance of this meteoric career, however, if one fails to sense the underlying nature of the man himself. Quite apart from his extraordinary technical proficiency, there was a driving force that dominated his entire life. I can find no single word that fully describes what this force was. Certainly, it was a deep and abiding love for surgery—so compelling that the frustrations of his first years in Wilmington were not enough to allow for compromise with them, or retreat from them. He was determined that his surgery was going to be of such a high quality that patients would no longer feel safer in going to Philadelphia, New York, or Baltimore for their operations. That he realized this ideal is, of course, a matter of record—fully documented. His success in achieving this goal can be attributed in part to another character trait, viz., his boundless and irrepressible enthusiasm for all things medical. So transparent, so contagious and so stimulating was it that not only did he attract others to him perforce, but they, in turn, became imbued with the same idealism, and with the same pride of performance in their own respective fields.

Under such a dynamic influence, the hospital was bound to grow; and its reputation, especially as a surgical center, came to be felt well beyond the limits of the city and state. His unrelenting pursuit of perfection reflected itself in many innovations that now seem routine and trite. How many of you realize that the first blood transfusion in Wilmington was given by Dr. Spackman, and, for several years, blood replacement was available only at your hospital? It was natural that, as a result of this background of experience, the first blood bank to be put into operation in Delaware was at the Memorial Hospital. Operative procedures were becoming more complicated and of much greater scope, so that again the need, so keenly recognized, became parent to the remedy. With increasing experience in the field of cancer surgery, Dr. Spackman developed a more comprehensive concept of the total needs of the cancer patient. Accordingly, a tumor clinic (The Carpenter Clinic) was established in 1935, so that X-ray and radium therapy might be made available when indicated. This was the first accreddited tumor clinic in the state. Two years later, a surgical resident was added to the House Staff group, and, by 1940, a three-year surgical residency was inaugurated with Dr. Kustrup, Dr. Jones and Dr. Brittingham implementing the program. This was the first approved residency in any specialty within the city or state. The value of this residency system to the hospital and to the welfare of its patients must be self-evident to all who have been exposed to its day-to-day operation over the last twenty-five years.

It is easy to live among these various refinements of hospital practice at the Memorial Hospital and yet fail to realize what spirit brought them into being. Those firsts that have been enumerated, together with many others, are, in fact, living monuments to the contribution Dr. Spackman made to the hospital and its host of patients. They bear eloquent testimony to the creed that guided him throughout his surgical career, viz., to give the very most of his time and his talents to ensure the comfort, and, if possible, the recovery of his patients. His integrity as a surgeon was instinctive, strict, and uncompromising, and has set a pattern that is both challenging and inspiring to all who practice surgery in the hospital today.

I am sure that his rigid adherence to what he called honest surgery represents one of his most significant and most enduring contributions to the reputation and, indeed, to the personality of the Memorial Hospital as we know it today.

This, then, must be the true substance of our tribute to the memory of Dr. James G. Spackman. It is the simple fact that his distinguished service to the hospital has made us aware not only of our rich heritage, but of our incalculable debt to him. I would not attempt to put into words my own sense of indebtedness, but I would like to leave with you these lines of Robert Frost. They seem to bespeak my own very personal feeling—

"The woods are lovely, dark and deep
But I have promises to keep
And miles to walk before I sleep."

● Cancer of the thyroid is a disease of which the treatment is far from being standardized. This paper presents the author's views in the management of fifty-one patients with this condition.

THE MANAGEMENT OF CARCIN

Joseph N. Attie, M.D.

Merits of Management Should be Considered

Considerable differences in the management of carcinoma of the thyroid have been reported in recent years, making it extremely difficult to interpret results and to decide on the merits of the various therapeutic approaches. Some authors practice marked conservatism in the handling of thyroid nodules[1,2] because of reports minimizing the incidence and dangers of thyroid cancer.[3] Most authors[4-7] are in agreement that cancer is present in about 10% of thyroid nodules and that the treatment of choice consists of resection of the involved lobe for all solitary nodules and the performance of a radical neck dissection on the involved side if carcinoma is found. One group of surgeons advocates a more radical approach consisting of extending the lymph node dissection into the mediastinum.[8,9] Some authors[10,11] prefer total thyroidectomy and removal of the paratracheal lymph nodes. One author[12] removes individual groups of involved lymph nodes in preference to the conventional neck dissection. Because of this lack of agreement, the management of 51 cases of carcinoma of the thyroid operated upon in the eight years ending August 1, 1959, is presented.

Incidence

During the past eight years there were 450 thyroidectomies perfomed by me, 51 of which were for carcinoma of the thyroid. Of the carcinoma cases, 13 did not have a thyroid mass as the first symptom — 7 had lateral lymph node enlargement with no palpable thyroid tumor; 4 were previously operated upon and the diagnosis made prior to being seen by me; one patient had dysphagia and had a filling defect in the cervical esophagus on barium study which proved to be thyroid cancer with invasion of the esophagus; one patient had bone metastasis and was thyroidectomized in order to enhance radioactive iodine pickup in the metastasis. Thus there were 38 cancers found in a total of 437 thyroidectomies, an incidence of 8.7%. Further analysis of these cases reveals the following (Table I): There were 38 toxic diffuse goiters with no cancers; 19 toxic nodular goiters with one cancer, or 5.2%; 256 clinically solitary nodules with 32 cancers, or 12.5%; 107 clinically multinodular thyroids with 5 cancers, or 4.7%; 17 patients

TABLE I. Incidence of cancer in various types of goiter

	No. cases	No. cancer	% cancer
Toxic diffuse goiter	38	0	0
Toxic nodular goiter	19	1	5.2
Non-toxic solitary nodule	256	32	12.5
Non-toxic multinodular goiter	107	5	4.7
Chronic thyroiditis	17	0	0
Total	437	38	8.7

HE THYROID

had various types of thyroiditis. Incidentally, 63 of the cases with clinically solitary nodules proved to have multiple nodules at operation.

The average age in this series of 51 thyroid cancers was 37. There were 7 patients below the age of 20, 9 between 20 and 30, 11 between 30 and 40, 12 between 40 and 50, 5 between 50 and 60, and 7 above the age of 60. There were 14 men and 37 women, or 1 to 2½; since thyroid nodules are eight times as prevalent in women as in men, it is evident that a thyroid nodule in a man is more likely to be malignant than one in a woman.

Symptoms

The usually described classical symptoms of thyroid cancer — hardness and irregularity, fixation and/or hoarseness associated with vocal cord paralysis — were often absent or late findings. In 37 patients the presenting complaint was a mass in the thyroid gland. Carcinoma of the thyroid was suspected in 11 of these cases, or 29% — in 3 of the 11 because of the presence of a lateral node in addition to the thyroid nodule, and in the other 8 because of hardness, irregularity or fixation of the gland. There were no cases of vocal cord paralysis, although in 2 patients a recurrent laryngeal nerve had to be sacrificed because of involvement in the cancer. One case was discovered incidentally in a patient with toxic nodular goiter — neck dissection in this patient disclosed several invaded lymph nodes. In 7 patients the presenting finding was a lateral node enlargement which proved to harbor metastatic thyroid cancer on biopsy. In each of these patients a thyroid tumor was not palpable preoperatively but one was found upon removal of the ipselateral lobe in every instance. These cases would have at one time been considered lateral aberrant thyroid cancers. As mentioned previously one patient was seen with bone metastasis as the first sign, and one appeared with a cervical esophageal lesion which was secondary to a carcinoma in the thyroid gland. The latter patient died shortly after thyroidectomy, cervical esophagectomy and esaphago-jejunostomy, and represents the only fatality in the entire series. Four patients were first seen after the diagnosis was established by previous surgery.

Several reports have been published[13,15] describing the use of radioactive iodine in the pre-operative evaluation of thyroid nodules. It has been shown that carcinoma is more prevalent in hypofunctioning ("cold") nodules than in hyperfunctioning ("hot") nodules, and some have advised against surgery in the "hot" nodules because of these findings. In the past 3½ years, I have studied 107 nodules of the thyroid gland and found cancer in 15 of 63 "hot" nodules, or 24%, 1 of 28 "warm" (neither hyper nor hypofunctioning as compared with the rest of the gland) nodules, or 3.6%, and in 2 of 16 "hot" nodules, or 12.5%. Because of this experience, I feel that all solitary nodules should be operated upon regardless of their affinity for iodine.

Treatment

The management varied, depending upon the histological type of carcinoma and the extent of the disease. Because the diagnosis could not be established accurately preoperatively, a total resection of the involved thyroid lobe was done for all laterally situated solitary nodules, and excision of the isthmus with a portion of each lobe was performed for midline nodules. If invasive carcinoma was suspected grossly, the diagnosis was confirmed by frozen section done on the removed lobe. In all other instances the diagnosis was made on paraffin section in 24 to 48 hours. If papillary carcinoma was found, or if lymph node invasion is present with other types of cancer, a unilateral, conventional neck dissection was performed through a single transverse incision.[16] If follicular or Hurthle cell carcinoma was found in the absence of involved lymph nodes, nothing further was done. Cases of extension of tumor beyond the midline were treated by bilateral total thyroidectomy. The patients who were discovered to have carcinoma in lateral lymph nodes were treated by radical neck dissection. Hemithyroidectomy was done in the 5 patients in whom the primary tumor was found in the ipselateral lobe, and by radical neck dissection and total thyroidectomy in 2 patients — one in whom the primary was not found on exploration but was discovered on sectioning the resected thyroid gland, and one in whom a nodule was present in both thyroid lobes, and both nodules proved to be papillary carcinomas. Four of the patients had subtotal thyroidectomies for multinodular goiters and small carcinomas were found in the resected specimens. No further surgery was done in these cases. In one case total thyroidectomy and bilateral neck dissection was done in one stage. The types of operations performed are shown in Table II.

TABLE II. Types of Operations Performed

Hemithyroidectomy	7
Hemithyroidectomy and unilateral radical neck dissection	28
Total thyroidectomy	4
Total thyroidectomy and unilateral radical neck dissection	6
Total thyroidectomy and bilateral radical neck dissection	1
Bilateral subtotal thyroidectomy (carcinoma incidental finding)	4
Hemithyroidectomy and partial cervical esophagectomy	1
Total	51

It is interesting to analyze the findings in the lymph nodes resected in the radical neck dissections (See Table III). 35 neck dissections were performed — 34 unilateral and one bilateral. Seven were done in patients with lateral node enlargemnts without a palpable thyroid tumor. In 5 patients a thyroid mass and lateral enlarged lymph nodes were palpable preoperatively, and in all 5 instances the nodes proved to contain thyroid cancer. In 23 cases no nodes were palpable, but because papillary carcinoma was found in

TABLE III. Radical Neck Dissections

Lateral nodes palpable, thyroid primary tumor not palpable (So-called lateral aberrant thyroid cancer)		7
Thyroid tumor and lateral nodes palpable (Lateral nodes proved to be metastatic)		5
Thyroid tumor palpable—no lateral nodes palpable (So-called "prophylactic" neck dissection)		23
Nodes positive histologically	14	
Nodes negative histologically	9	
Total		35

the resected thyroid lobe a radical neck dissection was done (so-called "prophylactic" neck dissection). In 14 of these cases metastatic cancer was found in the nodes, an incidence of 61%.

Pathology

There is much confusion in the classification of thyroid cancer. The simplest and most practical classification is that of Warren and Meissner,[17] which is as follows:

A. Differentiated carcinoma
  1. Follicular carcinoma
    a. Low grade localized carcinoma in adenoma
    b. Follicular adenocarcinoma
  2. Papillary carcnoma
    a. Low grade localized carcinoma in adenoma
    b. Papillary adenocarcinoma

B. Undifferentiated Carcinoma
  1. Small cell carcinoma
  2. Giant cell carcinoma

Many cases are mixed types. In such instances the prognosis is that of the most virulent pattern found in a particular tumor. These authors consider Hurthle cell carcinoma as variants of follicular carcinomas. In the present series of 51 cases, the distribution according to type of carcinoma was as follows: papillary carcinoma 29 cases; follicular carcinoma 10 cases; mixed papillary and follicular 8 cases; Hurthle cell carcinoma 3 cases; small cell carcinoma 1 case.

Results

Since the series reviewed is too recent, no long term results can be reported. During the eight years in which 51 patients were treated surgically, only three cases with primary cancer of the thyroid seen by me were not treated — two were too far advanced locally and one refused surgery. All 51 patients have been followed to date except for those who died. One patient died several hours after partial cervical esophagectomy and thyroidectomy, and represented the only postoperative mortality. There was one death due to cerebral metastasis two months after thyroidectomy and neck dissection for small cell carcinoma of the thyroid. The patient who had a thyroidectomy despite cervical spine metastasis was treated with radioactive iodine and expired two months after the operation. One patient died suddenly 7 days postpartum, presumably from a pulmonary embolus, 2½ years after hemithyroidectomy and unilateral neck dissection for papillary carcinoma — she was free of disease on examination several weeks prior to death. Another patient died of an unrelated disease 6½ years after hemithyroidectomy and unilateral neck dissection for papillary carcinoma. All the other patients are living and well from one month to 8 years after treatment. 10 patients in the series are living and well over 5 years since surgery.

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● **The best treatment at present of infiltrating bladder cancer seems to be pelvic node dissection and cystectomy with diversion of the urinary stream by anastamosing the ureters to a short segment of ileum.**

RADICAL SURGERY AND BLADDER CANCER

Edwin A. Mekanik, M.D.

Tumors of the urinary bladder arise, for the most part, from their transitional epithelium and the speed of their extension is usually related to their degree of differentiation. When their anaplastic grading reaches the Grade III or IV stage, the destruction of the tumor is usually beyond local measures. Untreated, the disease pursues a vicious course with obstruction and infection of the upper urinary tract as the major cause of death. It is always present in patients with this condition even though they die of other causes. When only symptomatic measures are employed, the average survival time from first symptoms to death has been 16½ months. With extensive infiltrating tumors it became obvious that segmental resection or cystectomy would not adequately control the disease for any acceptable time. Jewett[1] noted that the curability of these tumors was greatly influenced by the degree of infiltration of the bladder wall. Obviously, with penetration of the bladder wall, metastatic disease has to be considered. Metastases to the lymph nodes at the iliac artery bifurcations are most common. With this in mind, the extirpation of the pelvic contents came under consideration following the same train of thought as advanced for persistent cervical cancer after radiation and its failure. Pelvic exenteration led to the consideration of a bladder substitute and in April, 1950, an ileal segment was utilized by Bricker[2,4] and his associates. The subsequent course of their patients indicated the superiority of the ileal bladder to the wet colostomy or the distasteful skin ureterostomies. The advantages of the short intestinal segments have been the subject of numerous investigations and the cardinal reasons for their superiority have been enunciated.

The purpose of this article is to present a follow-up of four cases in whom segments of the intestinal tract were utilized as urinary conduits.

Case I

A sixty-three year old white man was seen in the OPD of the Memorial Hospital on September 16, 1952 with hematuria of eight week's duration. Cystoscopy revealed a lesion infiltrating the base of the bladder. Biopsy revealed a Grade III transitional cell carcinoma. On September 26, 1952, a pelvic node dissection, cystectomy, prostatectomy, seminal vesiculectomy, appendectomy and bilateral ureterosigmoidostomy was done. The pathology was transitional cell carcinoma, Grade III, occupying the entire trigone. On microscopic examination, infiltration into the muscle layer and right ureter had occurred.

The patient's only complication postoperatively was a thrombophlebitis from which he recovered and was discharged October 26, 1952. Recurrent episodes of hyperchloremic acidosis prompted his readmission and on February 27, 1953, he was re-explored. There was no evidence of persistent cancer so his ureterosigmoidostomy was diverted by transecting the colon above it, closing the distal segment, bringing out a colostomy and, in effect, fashioning a urinary bladder and conduit from sigmoid colon and rectum.

The patient has had subsequent admissions primarily for electrolyte disturbances, on each of which he has responded well to Sodium Lactate and Potassium Acetate medications. On June 10, 1959 the patient was alive and well.

Case II

A fifty-eight year old white woman was admitted to the Memorial Hospital on April 13, 1953 with gross hematuria of two weeks' duration. On April 15, 1953, cystoscopy revealed an extensive bladder tumor. Biopsy revealed epidermoid carcinoma, Grade II. On April 23, 1953, a pelvic node dissection, total histerectomy, bilateral Salpingo-oophorectomy, appendectomy, cystectomy and partial vaginectomy was done. An ileal bladder was devised and the ureters transplanted into it. The bladder specimen revealed a tumor 10cm. in diameter extending through the full thickness of the bladder wall and obstructing the left ureter. The patient's post-operative course was satisfactory and she was discharged on May 29, 1953. She has remained well, has gained weight and was contacted on June 10, 1959 at which time, as many times before, she refused to see any physicians. Blood chemistries obtained on her in late 1956 were within normal range.

Case III

A sixty-nine year old white man was admitted to the Memorial Hospital on June 3, 1953 for investigation of recent hematuria. Cystoscopy revealed an infiltrating carcinoma obstructing the left ureteral orifice. A biopsy was done and reported as transitional cell carcinoma, Grade III.

On June 11, 1953, a pelvic node dissection, cystectomy, prostatectomy, seminal visculectomy and appendectomy were done. An ileal bladder was fashioned with the usual ureteral anastomoses. The patient's postoperative course was smooth and he was discharged on July 7, 1953.

The patient has since had numerous surgical procedures by other surgeons none of whom has been able to demonstrate a recurrence of his previous malignancy. In June, 1959, the patient was active and well.

Case IV

A sixty-two year old white man was admitted with hematuria. Cystoscopy was done and revealed an extensive bladder lesion. Biopsy of this lesion revealed a transitional cell carcinoma of the bladder, Grade IV. On April 3, 1958, a pelvic node dissection, cystectomy, prostatectomy, seminal vesiculectomy and appendectomy were done. An ileal bladder was fashioned and the usual ureteral anastomoses were carried out. The specimen revealed, on microscopic examination, tumor extending through all coats of the bladder and into the surrounding fatty connective tissue. The patient was discharged on April 21, 1958.

Subsequently, bilateral inguinal herniae developed and with progressive symptoms arrangements were made to hospitalize the patient and repair his herniae. On November 27, 1958 the patient was re-admitted to the Memorial Hospital at which time it was elicited he had developed, subsequently, symptoms of incomplete, small intestinal obstruction associated with an anemia, fever and a sciatic-like pain. Intubation failed and on December 15, 1958, exploration was carried out. Lysis of a distal ileal obstruction was done, relieving the obstruction but in the retropubic space an abcess was encountered. This was traced to a perforation of the rectum. Biopsy of the abcess wall revealed transitional cell carcinoma. The patient expired five days postoperatively due to massive bleeding from a gastric ulcer.

Comment

Of the four cases presented above, only one represents a failure in the eradication of infiltrating bladder cancer by radical surgery. The ileal segments utilized have functioned well with a minimum of discomfort. One case, subsequently, had a bladder devised from sigmoid colon and, although he has had problems, has now survived almost seven years following his surgery without evidence of recurrence of his disease. A fifth case, not presented, died of a meningitis secondary to a pyelonephritis. At autopsy, two and one-half years after similar pelvic surgery, no evidence of persistent disease could be found although a new lesion, a carcinoma of the ascending colon was found.

Until some other means of eradicating infiltrating bladder cancer can be found, pelvic node dissection and cystectomy appears to afford the most promising results when the disease and its spread are confined to the pelvis. Anastomosing the ureters to a short ileal segment has proven to be the most satisfactory means of diverting the urinary stream.

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We all know of Dr. Spackman's intense interest in surgery for cancer. Throughout his professional career he was associated with members of the staff of the Memorial Center for Cancer and Allied Diseases in New York City. It seems significant that of the seven scientific articles contributed by his former residents in this issue, the greater proportion are directly related to surgery in the treatment of cancer.

● **Diseases of the colon are of distinct interest to the surgeon. They present themselves usually as disturbances in colonic function. Dolichocolon, a congenital disease associated with increased length of the colon, is somewhat rare.**

CONGENITAL DOLICHOCOLON

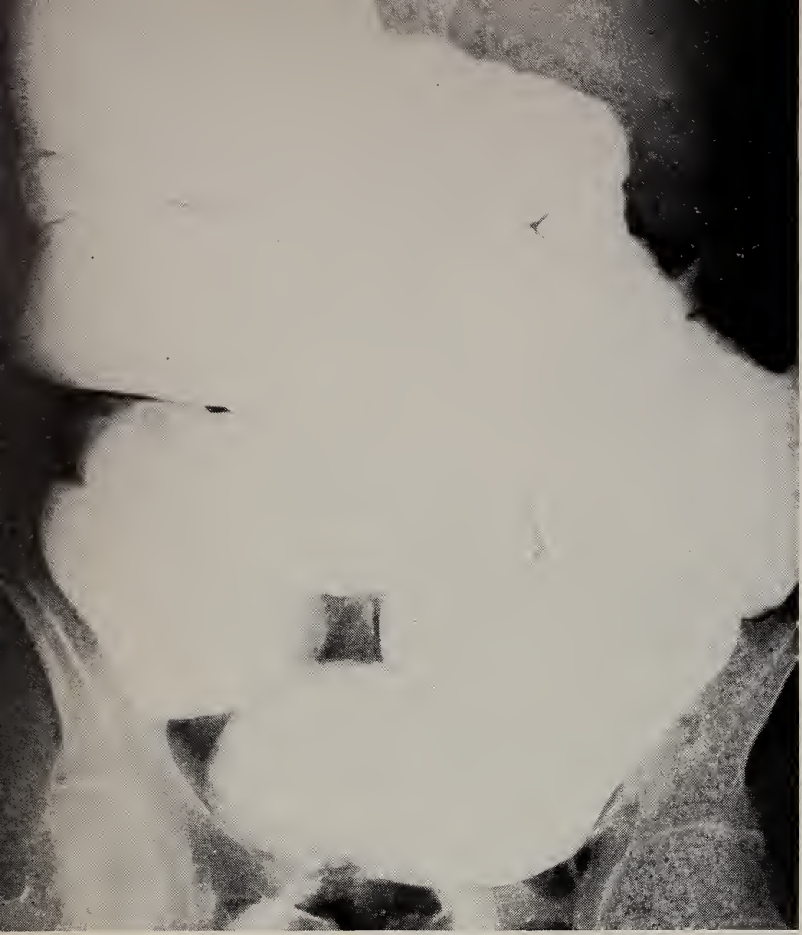
JOSEPH P. SELTZER, M.D.

James Guie Spackman, M.D., master surgeon, was keenly interested in the surgery of diseases of the large bowel. His strict adherence to the principles of preoperative care, to surgical fundamentals and to postoperative details undoubtedly helped chart the course to his outstanding success in this field. Those of us who had the privilege of training with Doctor Spackman recall his terse comments and his characteristic manner of illustrating surgical fact and principle so that neither would be forgotten. Peculiarly apt to the art of Medicine, it always has seemed to me, is a comment of the late Henry Brooks Adams: "A teacher affects eternity; he can never tell where his influence stops." Adams' remark referred, of course, both to good and bad influence and so he did not modify the noun 'teacher' by the adjective 'good' and then, again, he was not thinking of Doctor Spackman; he did not know him.

Differentiation a Fine Point

When the colon becomes increased both in length and calibre, then the term, 'Megacolon,' is more appropriate. Because of the large surface area of mucous membrane that results from the changes that mark the disease, there is great absorption of water. This process, in turn, results in firm and relatively dry fecal material which resists the propulsive effects of peristalsis. In sequence, constipation ensues and because of the redundant colon and the weight of its contents, volvulus becomes a strong possibility. Thus, chronic constipation is the chief complaint of the megacolon patient although in some cases there may be normal bowel function between attacks of volvulus, which occurs usually in the sigmoid. Dolichocolon associated with megacolon must be distinguished, therefore, from megacolon of other, more familiar, types.

In many cases the patient with dolichocolon will be helped by medical management but in those cases in which recurrent volvu-



Barium study showing atonic, elongated colon (megacolon). Note long, redundant sigmoid. (Film is reversed.)

lus is a factor, resection of the redundant sigmoid is the best treatment. Sigmoid resection produces a decrease in size of the mucosal area of absorption, thus permitting of a higher water content of the stools, with resultant correction of the constipation.

Because of its diagnostic value in the type of case described in this paper, x-ray study is considered indispensable. It seems in order, therefore, to specify the various types of megacolon which, itself, is the response of the colon to chronic obstruction.

An outline of the classification of various types of megacolon follows:

1. Organic megacolon: The name given those cases in which there is a grossly demonstrable cause, e.g., pelvic tumor creating extrinsic pressure, or stenotic lesion of congenital or inflammatory nature. The treatment indicated in this type of case, that is to say, correction of the underlying pathology, is obvious.

2. Aganglionic megacolon (Hirschsprung's disease): A type congenital in origin and characterized by constipation beginning at birth. Its nature and proper surgical therapy, the latter consisting of resection of the aganglionic segment of colon, have been clearly described by Swenson[1] and others.

Acquired aganglionic megacolon is described by Raia,[2] reporting from Brazil. He finds the entity quite frequent in aged individuals. It has many features in common with Hirschsprung's disease. The symptoms, however, are of a few years' duration only. Raia reports satisfactory results from the surgical treatment used by Swenson in infants and children. The etiology of the disease is believed to be on a nutritional deficiency basis.

3. Functional megacolon: The most common type and one associated with chronic constipation, with emotional disturbances a frequent accompaniment. It is plain to see that in these cases surgical treatment is unnecessary.

Dolichocolon with dilation secondary to recurring attacks of volvulus of the sigmoid colon is illustrated in the following case report. Similar cases have been reported by Lee, Bebb and Brown,[3] also by Sullens and Petkevich.[4]

Case Report

The patient, a 67-year-old white woman, first seen April 17, 1959, gave a history of constipation of long standing, for the relief of which she had taken laxatives, many and varied. In the past few years she had begun to have attacks of abdominal cramps, distention and nausea. The attacks usually were relieved spontaneously or by enema, the latter resulting in expulsion of large amounts of fecal material. She had consulted several physicians and had had x-rays of the large bowel a number of times. She stated that she had been told she had a large, dilated colon. Her health otherwise was good.

There was no past history of serious illness, nor of operation, nor of injury. She had had seven full-term pregnancies.

Physical examination was essentially negative except for slight distention of the abdomen and some apparent tenderness to palpation in the region of the left colon; no abdominal masses were palpable. Peristaltic sounds were normal.

The patient was admitted to the Kanawha Valley Hospital, Charleston, West Virginia, April 20, 1959.

Blood and urine examinations were within normal limits.

X-ray examination of the chest, also sigmoidoscopy, were negative. An x-ray of the colon, April 21, 1959, was reported as showing marked elongation, and dilatation throughout its entire length, with a long, redundant sigmoid loop. The colon emptied well and contracted quite satisfactorily after expulsion of the barium. The gallbladder and remainder of the gastrointestinal tract, also examined by x-ray were reported to be normal.

The diagnostic impression at this time was 'megacolon,' based on recurring volvulus of the sigmoid, which was of increased length congenitally. Resection of the redundant sigmoid colon was advised and the patient permitted to leave the hospital, to return later for surgery if she so decided.

She was readmitted to the hospital June 1, 1959, and was prepared for large bowel surgery. Enemas, cathartics and a low-residue diet, together with the administration of Kantrex, comprised the preoperative regimen.

Operation: On June 3rd, at laparotomy through a left rectus incision, the sigmoid colon was found to be long and redundant; the mesentery of the sigmoid was narrow and somewhat thickened, with visible scarring at its root. The sigmoid itself was freely rotatable so that, when filled with fecal material, volvulus easily could occur.

Resection of the redundant sigmoid and end-to-end anastomosis were performed, with two layers of interrupted silk sutures placed just above the peritoneal reflection. The patient's postoperative course was without incident.

On pathologic examination, length of the segment of colon that was resected was reported to be 30 cm. Other than thickening of peritoneal surfaces of its mesentery, no gross nor histologic abnormality of the sigmoid was reported.

At the time of the patient's discharge from the hospital, June 14, 1959, the surgical wound was well healed and the gastrointestinal tract functioning quite satisfactorily.

Follow-Up: Close, careful follow-up in this case indicates that thus far the improvement enjoyed by the patient is sustained. She reports much better bowel function.

Summary

A case of congenital dolichocolon with dilatation secondary to recurring sigmoid volvulus is presented. Treatment by surgical means resulted in apparent improvement. Close, careful follow-up is being continued.

Cases of the type presented are not common. The disease, 'megacolon,' at all times warrants extremely close observation and study so that differentiation between its various types can be made, for the purpose of selective treatment.

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ANNUAL MEETING, Medical Society of Delaware
Rehoboth, Delaware September 8, 9, 10, 1960

● The author presents a detailed account of recurrent epidermoid carcinoma in a 35 year old patient, five and one half months pregnant at the time of the first radical resection.

RECURRENT EPIDERMOID CARCINOMA OF THE TONSILLAR FOSSA

Robert A. Mino, M.D.

Epidermoid carcinoma of the tonsil is the second most common form of malignant neoplasm of the upper air passage, superseded only by carcinoma of the laryngopharynx. It accounts for 1.5 to 3 per cent of all forms of carcinoma. These carcinomas are most frequently observed in the sixth and seventh decades of life. In a series of 139 cases Perussia[2] found that 90% (125 cases) occurred in men. In contrast, one-third of lymphoepitheliomas and lymphosarcomas are found in women. In the third and fourth decades of life lymphosarcomas are more common than carcinomas.

Carcinomas of the tonsil are commonly exophytic, superficially ulcerated tumors which usually arise from the upper pole. Spread to the solft palate often occurs at the level of the supra-tonsillar fossa and extension to the anterior tonsillar pillar is frequently seen. Invasion of the glossopharyngeal sulcus is common and in the more advanced cases, the base of the tongue is frequently involved. The posterior tonsillar pillar is seldom invaded.

Since a great portion of the tumors are rather undifferentiated epidermoid carcinomas, metastasis to an upper cervical node is usually present.

The embryonal character of a great many of these carcinomas accounts for their great radiosensitivity. Various reports indicate a five year cure rate varying from 17 to 30 per cent following roentgentherapy. Failure following therapy is occasionally due to lack of sterilization of the primary lesion, but in most cases the treatment fails because of subsequent metastasis to the neck and generalization of the disease.

Evaluation of the course, treatment and prognosis of carcinomas arising from the tonsillar fossa from which the tonsils have been removed many years previously is not possible since most of the published reports fail to make a distinction between tumors of tonsillar origin and those arising from the mucous membrane of the fossa.

Case Report

The patient, a 35 year old pregnant white woman was admitted to the Protestant Deaconess Hospital, Evansville, Indiana on

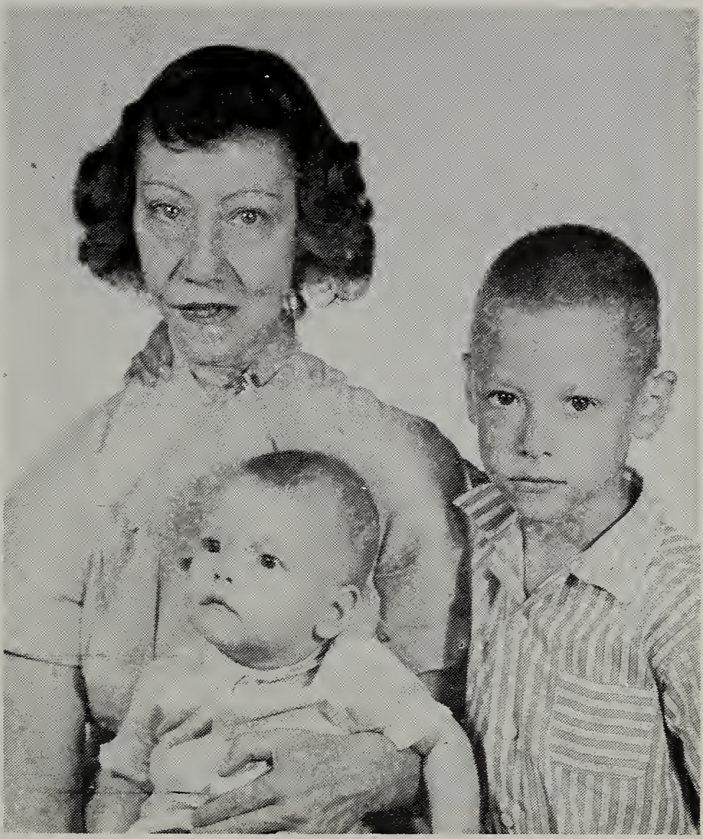

Fig. 1. This shows a front view of patient, the oldest boy who was born 3½ months after radical resection and the second boy who was born in March 1959. Practically no deformity of the face is noted in this view. Photograph taken 6 years and 8 months following operation.

12-1-52 with recurrent carcinoma of the right tonsillar fossa with extension to the base of the tongue, anterior and posterior tonsillar pillars and adjacent soft palate, and was discharged 12-22-52.

Summary of past medical history: On 12-17-51 the patient was seen by Dr. Victor H. Mino with an upper respiratory tract infection of one week's duration. In addition to the presence of a moderate pharyngitis, a 2 cm. superficially ulcerated mass, which was thought to be a carcinoma, was also noted. The tonsils had been removed fifteen years previously. Examination failed to reveal any other significant findings, and in particular there were no palpably enlarged cervical lymph nodes. Examination of the chest by x-ray on 12-24-51 failed to reveal any significant abnormalities. It is interesting to note that her maternal grandmother had a "cancer of the throat" which caused her death at the age of 32 years, and a maternal uncle died at the age of 40 years from a "cancer of the upper air passage." On 12-19-51 she returned to the office and a biopsy was obtained of the lesion in the tonsillar region. Microscopic examination of the excised tissue* revealed a very undifferentiated epidermoid carcinoma of the tonsillar region.

During the interval of 12-28-51 through 2-11-52 she was given irradiation to the lesion** by direct contact (50 kv, 1 mm. al. filtration, 2700r measured in air x 3 for a total dose of 8100r) and through two lateral 8 x 12 cm. neck fields (250 kv, ½ mm. cu. filtration, 50 cm. target-skin distance, for a total dose of 2700r measured in air to each lateral field). Due to incomplete regression of the tumor, the patient was given an additional 3200r measured in air (250 kv, ½ mm. cu. filtration, 50 cm. target-skin distance) utilizing two lateral 4 x 4 cm. fields during the interval between 3-25-52 through 4-2-52, and 4000r measured in air by direct contact (50 kv, no filtration) on 5-12-52. Approximately two months following completion of therapy, the patient began to notice a gradual "return" of the previously treated lesion and

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**By Arthur A. Hobbs, Jr., M. D., Radiologist, Protestant Deaconess Hospital, Evansville, Indiana.

*By Fred E. Mills, M. D., Pathologist, Protestant Deaconess Hospital, Evansville, Indiana.

she returned to consult Dr. Victor H. Mino and Dr. Raymond W. Mino on 11-3-52. My first contact with this patient occurred at this time. Examination revealed the presence of an indurated 2 cm. mass beneath the mucous membrane in the right tonsillar fossa which invaded the right side of the base of the tongue and the anterior and posterior tonsillar pillars. There was a separate ¾ cm. submucosal mass in the supra-tonsillar fossa with beginning extension onto the adjacent soft palate. At this time the patient was at 4½ months' gestation, this being her first pregnancy. On 11-9-52 the patient was admitted to the Protestant Deaconess Hospital, Evansville, Indiana, and on 11-10-52 I obtained biopsy of the lesion under general anesthesia. Microscopic examination of the excised tissue confirmed the clinical diagnosis of recurrent carcinoma and the patient was discharged from the hospital on 11-16-52.

Patient Reassured Of Risk

The patient and her husband were given a detailed account of the proposed surgical procedure necessary to extripate the recurrent disease. Since the patient was in the course of her first pregnancy and only approximately four months from term, she was somewhat apprehensive and feared that the surgery might result in miscarriage. After being assured that there was little risk of premature labor, during or after surgery, she consented to the proposed operation.

The patient was re-admitted to the Protestant Deaconess Hospital on 12-1-52. Complete examination revealed the patient to be 5½ months pregnant and the fetus was viable. The recurrent tumor in the right tonsillar fossa showed only a very slight increase in size as compared with the dimensions at the time of the biopsy on 11-10-52. There were no palpably enlarged cervical lymph nodes. X-ray examination of the chest showed no abnormal findings. There was a moderate anemia which was corrected by four transfusions of blood, 500 cc. each, so as to restore her red blood cell count to normal prior to the operation.

First Operation

On 12-4-52 the patient was subjected to an operation by the author. A tracheostomy was performed and a Martin #6 tracheostomy tube inserted. This was then connected to the anesthetic machine by a Schweizer tube and anesthesia continued. An en bloc right radical neck dissection, with resection of the right one-half of the mandible, floor of the mouth, base of the tongue, tonsillar fossa and the anterior and posterior tonsillar pillars including the adjacent soft palate and lateral pharyngeal wall, the pterygoid contents and the lower portion of the parotid gland, was performed. A flap of buccal mucosa with the attached underlying muscle, immediately below and posterior to the right parotid duct, was mobilized, leaving it attached superiorly. The remaining posterior pharyngeal wall was mobilized so as to allow it to shift toward the right side. The buccal flap was rotated posteriorly and sutured to the mobilized posterior pharyngeal wall resulting in closure of the operative defect and reconstruction of a new right lateral pharyngeal wall The defect resulting following removal of a portion of the soft palate was closed by approximately the anterior and posterior mucous membranes. The mucous membrane of the tongue and the floor of the mouth was sutured to the buccal mucosa and the divided lip reconstructed in the usual manner. The suture line along the floor of the mouth and the reconstructed pharyngeal wall was re-enforced by approximating the external flap to this suture line. The closure of the external wound was then completed. The tracheostomy tube was anchored in place with silk sutures. A #14 French catheter was placed through the left nostril into the esophagus for tube feeding. During the course of the 11½ hour operative procedure, 4,000 c.c. of blood and 2,500 c.c. of 5% glucose in water were administered intravenously. The patient tolerated the operative procedure extremely well and concluded the operation with a blood pressure of 108/70 with a pulse rate of 84 per minute. The blood pressure prior to the operation was 95/60 (the patient has been a hypotensive for years) and the pulse rate was 88 per minute.

Results Of Pathological Examination

Pathological examination of the excised surgical specimen (Surgical #12-3093-52) revealed a recurrent or residual carcinoma of the tonsillar area with extension to the structures previously described. The surrounding tissues showed considerable fibrosis as the result of previous x-ray therapy. The lymph nodes revealed a moderate degree of fibrosis without tumor involvement. Microscopic examination revealed the tumor was similar in appearance to that noted in the preoperative biopsy and to the original biopsy specimen obtained 12-19-52.

Ambulation was started on the first postoperative day and the postoperative course was uneventful. At the time of discharge from the hospital on 12-22-52, eighteen days postoperatively, the external and internal wounds were completely healed except for a 4 mm. area of granulation tissue at the posterior border of the superior alveolus. There had been no interference with the pregnancy.

Following discharge from the hospital, the patient resumed her usual activities as a housewife. Irrigation of the mouth and pharynx as well as changing of the tracheostomy tube were carried out daily. She was allowed to swallow clear liquids, but solid foods were converted into a liquid by the use of a Waring blender and these were then taken by nasal tube which the patient inserted. Antibiotics were administered in order to prevent infection and appropriate analgesics completely controlled the discomfort in the pharynx and neck.

Complications

In the subsequent course of this patient a number of undesirable late complications occurred as a result of the previous irradiation. On 12-29-52 the patient accidently fell out of bed striking the mid-point of her external scar and tearing it open so as to expose the carotid bulb and a 3 cm. surrounding area. The patient failed to inform me of this occurrence until twenty-four hours later. This area had previously received heavy irradiation in the treatment of her original carcinoma causing interference with the healing process. The opened wound already showed signs of beginning infection. Parenteral antibiotics, which the patient was already receiving, were doubled in amount and topical Varidase was applied to the wound and the infection slowly improved. One week later the stump of the excised carotid artery, which had previously been subjected to heavy irradiation, began to bleed slightly, necessitating a secondary ligation of the stump. On 1-17-53 the wound appeared clean; however, the external carotid artery stump again required ligation because of recurrent bleeding. In order to promote healing of the external carotid artery stump, a new source of blood supply was obtained by placing a pedicle graft (skin and fat) taken from the normal tissues of the neck and suturing this into the defect over the carotid vessels and a compression dressing applied. The wound healed without incident.

The granular area posterior to the superior alveolus continued to heal very slowly since this area had also received heavy irradiation.

Birth Of First Child

On 3-13-53, approximately 3½ months after the operation, the patient delivered a full term, perfectly normal baby boy without difficulty.

On 3-29-53 the wound posterior to the superior alveolus was completely healed and the tracheostomy tube was removed. The patient was allowed to take a liberal diet with the omission of rough foods. Swallowing was normal, regurgitation of food through the nostrils did not occur and there was no trismus. She still required medication for the control of pain in her shoulder and neck. There was no evidence

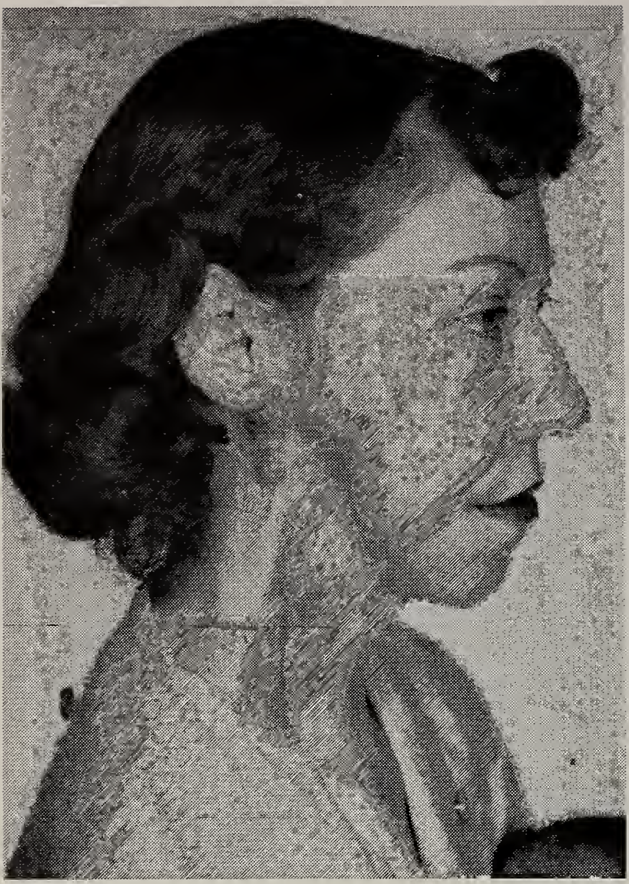

Fig. 2. Right lateral view with the hair pulled back behind the ear. Notice the obvious depression caused by surgical absence of the right side of the mandible and by loss of tissue resulting from the right radical neck dissection. Atrophy and scattered pigmentation of the skin with telengectasia are the late results of the previous irradiation. This area is not usually visible since the patient's hair covers most of the defect.

of recurrent or metastatic disease. Because of the reduced resistance of the tissues, which had been heavily irradiated, daily irrigations of the mouth and pharynx were continued. In May 1953 a small area of radionecrosis appeared in the right pharyngeal wall just above the pyriform sinus which finally healed by the later part of August 1953.

Onset Of Paralysis

In November 1953, during a follow-up examination, the patient suddenly developed paralysis of the entire left side of the body. Apparently this was due to a small embolus from the very short external carotid artery stump since the symptoms appeared immediately following gentle palpation of the carotid bulb. One minute later the patient was given Papaverine intravenously with almost immediate disappearance of the paralysis. Three and one-half hours later the paralysis returned and was again relieved by the same intravenous medication. An hour later Paveril was given by mouth and continued at intervals of four hours for the succeding two months. There has been no further episodes of paralysis and no evidence of neurological disturbances.

In December 1953 late radionecrotic ulcerations began to appear on the left pharyngeal wall. The process continued for approximately three years. Large doses of antibiotics were administered to control infection and the pharynx was kept clean by daily irrigations. Nasal tube feedings were utilized except for the ingestion of liquids. The pharynx has remained healed for the last three years. Since that time irrigation of the pharynx has been performed by the patient's husband each day.

Second Pregnancy

Although the patient desired another child, pregnancy was discouraged until sufficient time had elapsed so as to make recurrence of the tumor a remote possibility. On 3-2-59 the patient delivered another perfectly healthy baby boy.

In spite of the excellent oral hygiene, the patient developed dental caries of the type typically seen following irradiation of the oral cavity or pharynx; consequently, all teeth were extracted except for three in the lower left alveolus. In September 1958 the upper jaw was fitted with a set of false teeth and a removable lower plate was made, extending to the right side, in order to fill in the space left by the jaw resection, and attaching to the three remaining teeth.

At the present time, over 7 years following the radical resection, the patient shows no evidence of her original disease. Swallowing is accomplished normally and there is no regurgitation of food through the nose.

The remaining lower jaw functions normally and trismus is absent. Her speech is unimpaired.

Photographs (Figs. 1, 2 and 3) of the patient and her children were taken in August 1959, 6 years and 8 months following radical resection of the recurrent carcinoma of the right tonsillar fossa and adjacent structures. Front view of the patient shows almost no visible deformity. The left lateral view shows only changes in the skin produced by the previous irradiation. The right lateral view shows a depression caused by surgical absence of this side of the jaw and flattening produced by the right radical neck dissection. Skin changes produced by the previous irradiation are also visible. The hair is ordinarily worn so as to cover the surgical defect and the skin changes. The oldest child, who is a perfectly healthy, intelligent boy, was born in March, 1953, 3½ months after the radical resection. The youngest child, who is obviously a beautiful baby, was born in March, 1959, almost 6 years after the birth of the first child.

DISCUSSION

In the patient presented in this report, a primary undifferentiated epidermoid carcinoma was discovered in the right tonsillar fossa fifteen years after previous surgical removal of the tonsils. In view of this information and also since examination failed to reveal the presence of tonsillar tissue in the left fossa, it was assumed that the carcinoma in the right side originated from the mucous membrane of the tonsillar fossa although it was fully appreciated that the neoplasm might possibly have developed from a small tonsillar remnant.

In reviewing the family history, the previous occurrence of certain cancers appears to be of some significance. Heredity, as a possible factor in the genesis of this patient's carcinoma, deserves some consideration in view of the fact that her maternal grandmother had a "cancer of the throat" which caused her death at the age of 32 years and a maternal uncle died at the age of 40 years from a "cancer of the upper air passage."

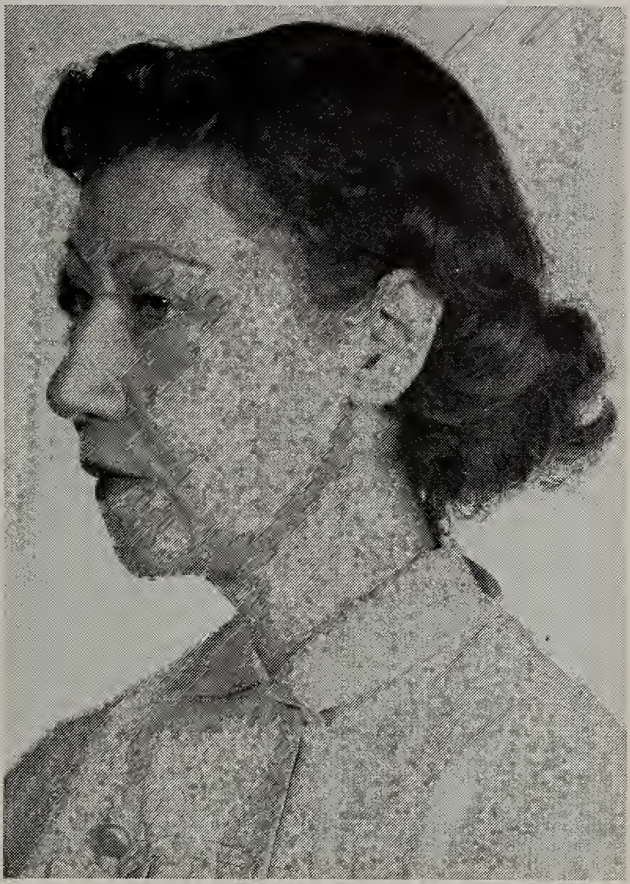

Fig.3. Left lateral view with the hair pulled back behind the ear. Atrophy of the skin, scattered pigmentation and telengectasia roughly outline the area previously irradiated. These changes are usually not seen since the patient wears her hair so as to cover this area.

In the treatment of cancer of the tonsillar region irradiation is still the method commonly employed. When roentgenotherapy is employed in a sufficient quantity to achieve an expected eradication of the cancer, permanent damage to the surrounding structures often results in a high incidence of late radionecrosis and subsequent operation to remove residual tumor, when irradiation has failed, is much more difficult, fraught with many complications and incapable of giving as high a cure rate as primary surgical removal.

In the past decade, an increasing number of surgical attempts have been made in removing not only the recurrent lesions but also the primary tumors located in the tonsillar region. Ward, Edgerton, Chambers and McKee[3] recently reported a series of 553 patients with carcinoma of the oral cavity (floor of mouth, with or without mandibular involvement, tongue, gum, buccal region, palate, tonsillar fossa and etc.) treated at the Johns Hopkins Hospital between January 1946 and January 1958. Four hundred and fifty three of these patients were treated by the composite operation (en bloc or in-continuity radical resection of the cancer with radical neck dissection) with an over-all mortality of 3.9%. Forty-seven per cent (47%) of the total patients had a history of x-ray failure with obvious recurrence prior to operation. Three hundred and seventeen patients were operated upon over five years ago. Of the two hundred and seventy-three determinate patients in this group 40% (one hundred and eight) are living and well without recurrence five years following operation.

The great advances and the safety and success of present-day radical surgery are dependent upon the contributions of a number of factors. Numerous publications have stressed the advances in anesthesiology, antibiotic therapy, preoperative, operative and postoperative fluid and electrolyte therapy, plasma and blood transfusions, etc. The author[1] has previously stressed the dominant role of massive blood transfusions in the maintenance of a stable course during the performance of extensive surgical procedures.

As might be expected, the presence of the pregnancy in association with the recurrent carcinoma was the source of considerable concern to the patient. She feared that surgery might induce premature labor or adversely affect the fetus so as to result in the birth of an imperfect baby. That the patient should entertain these misgivings is not surprising since similar expressions were made by several physicians who were not familiar with the stable course maintained throughout the long operative procedure and in the subsequent postoperative period by individuals subjected to radical extripation of cancers in the head and neck.

That the gestation proceeded smoothly and terminated at the expected date with the normal delivery of a perfect baby boy is due to the maintenance of a relatively constant environment for the fetus, particularly during the preoperative, operative, postoperative and subsequent course of the mother. A brief discussion of the factors contributing to the maintenance of this relatively constant environment for the fetus deserves further consideration.

Following conception, the gestation proceeded normally and the general health of the mother was good. After biopsy of the recurrent cancer on 11-10-52 the dysphagia which occurred was controlled by appropriate analgesics and the nutrition adequately maintained by nasal tube feedings so that when she again entered the hospital on 12-1-52 her physical condition was found to be excellent except for the presence of a moderate anemia which was corrected by blood transfusions prior to surgery.

During the course of the long (11½ hours) and extensive operative procedure on 12-4-52, the patient maintained a stable course with insignificant fluctuations in the blood pressure and pulse rate and concluded the operation with a blood pressure of 108/70 and a pluse rate of 84 per minute. The blood pressure prior to the operation was 95/60 (the patient has exhibited asymptomatic hypotension for many years) and the pulse rate was 88 per minute. The slight increase in the blood pressure noted at the conclusion of the operation is temporary in nature and occurs following ligation of the internal jugular vein. The stable course throughout the operative procedure permitted a constant environment for the fetus and was made possible by the carefully controlled anesthesia and by continuous replacement of blood (4000 cc.). Since deep levels of anesthesia are not necessary in head and neck surgery, equal proportions of nitrous oxide and oxygen with the continuous infusion of small amounts of sodium pentothal provided adequate anesthesia and assured a sufficient concentration of oxygen throughout the operation. The administration of the anesthetic agent through a tracheostomy permitted an unobstructed airway and facilitated the conduct of the operation within and adjacent to the pharynx.

The uneventful postoperative course in the hospital and in the subsequent period at home, except for the accidental injury that resulted in exposure of the carotid vessels but which was managed with minimal disturbance to the patient, permitted the gestation to proceed normally and terminate on the expected date in the normal delivery of a perfect baby boy.

In order to achieve an expected eradication of the primary cancer in the tonsillar region it was necessary to administer what was considered to be a sufficient quantity of irradiation. In spite of the heavy amount of roentgentherapy, complete destruction of the cancer did not occur and unfortunately the surrounding tissues were permanently damaged, subsequently resulting in a number of serious late complications.

The first complication related to her previous irradiation occurred on 12-29-52, twenty-five days after operation. The healed incisional scar in the skin flap, just above the level of the carotid bulb, was torn open in such a manner as to expose the carotid bulb and external carotid artery stump by striking the corner of a night stand during an accidental fall from the bed. Previous irradiation to this portion of the skin flap interfered with normal healing of the incision to such an extent that the incisional scar was disrupted by the relatively weak blow incurred in the fall. A serious problem was created by this uncovering of the previously irradiated external carotid artery stump since firm healing of this ligated structure was partially dependent upon the blood supply provided by the overlying skin flap; disruption removed this necessary blood supply. Since the patient failed to inform me of the occurance of the disruption until 24 hours later, the rapid spread of infection, in this area of reduced resistance, prevented immediate closure of the wound. In addition to the large doses of parenteral antibiotics, topical antibiotics, alternating with topical varidase, were applied to the open wound and the infection slowly subsided. One week later, the stump of the external carotid artery began to bleed slightly, necessitating a secondary ligation of the stump. On 1-17-53 ligation was again required to control recurrent bleeding. Since the wound appeared fairly clean and since there was danger of a "blow-out" of the external carotid artery stump, a new source of blood supply was obtained by immediately placing a pedicle flap of skin and fat, taken from from the normal tissues of the neck, and suturing this into the defect over the carotid vessels and maintained in place by a special type of compression apparatus. Healing of the wound occurred without incident.

The sudden development of paralysis of the left side of the body in November of 1953 was not unexpected since it was assumed that some dilitation, even if only minimal, would occur following the secondary healing of the external carotid artery stump. Embolization of a small clot, which had formed in the dilitation, apparently occurred following gentle palpation of this area and resulted in the paralysis. Since this event had been anticipated, Papaverine, which had been kept constantly available, was quickly given to the patient intravenously and the paralysis immediately disappeared. Continued freedom from paralysis was obtained by the administration of oral Paveril for the next two months. At the present time, the patient shows no evidence of neurological disturbances.

The management of late radionecrosis of the pharynx is tedious and time consuming and too often is neglected in many patients. No effort should be spared in the care of this serious complication, since failure to do so not only increases morbidity and suffering but often results in the patient's death. The oral cavity and pharynx must be kept clean by daily irrigations, which removes exudates, necrotic tissue and food particles, thereby reducing bacterial contamination to a minimum. Antibiotics, at times in very large doses, are utilized and the antibiotic agent is changed at intervals in order to prevent the development of resistant organisms. Adequate nutrition must be maintained and, if necessary, taken by means of a nasal tube, which the patient inserts. An ordinary food blender will readily convert solid food into a liquid, which can then be taken by nasal tube.

When radionecrosis exists, pain is often severe and may make the patient's life so miserable as to lead to self-destruction. With rare exception, this suffering need not occur since the administration of appropriate analgesics, tranquilizers, sedatives, etc., will usually control the patient's symptoms.

Following radical resection of the carcinoma, reconstruction of a new pharyngeal wall was accomplished by utilization of tissue obtained from a buccal flap and by mobilization and shifting of the remaining posterior pharyngeal wall. Complete anatomical and functional restoration was obtained. Swallowing, speech and tongue motion are not impaired and trismus is absent. The chin contour is not significantly altered since the jaw was divided slightly to the right of the midline in order to preserve the width of the chin. Since September 1958 the patient has utilized a set of dentures, the lower plate being attached to the three remaining teeth.

Over seven years have elapsed since the radical resection of the recurrent carcinoma, and the patient shows no evidence of her original disease.

Conclusions and Summary

1. A case of recurrent carcinoma of the right tonsillar fossa, invading the base of the tongue, anterior and posterior, tonsillar pillars, soft palate, etc., occurring in a 35-year-old pregnant white woman, is reported.
2. Radical resection of the carcinoma in continuity with radical neck dissection was performed without adversely affecting the pregnancy by the maintenance of a relatively constant environment for the fetus.
3. The factors responsible for the maintenance of the relatively constant environment for the fetus are briefly discussed and the dominant role contributed by the replacement of large quantities of blood stressed.
4. The patient gave birth to her first child 3½ months after the operation for cancer and the second child was born approximately 6 years after the first child. Both deliveries were normal and the children are beautiful, healthy and intelligent.
5. The method utilized in reconstruction of a new lateral pharyngeal wall is reported.
6. An account is given of the occurence and management of the late complications of roentgentherapy.
7. It appears that radical surgical resection, in continuity with radical neck dissection, offers a better outlook for the patient with cancer than any other method employed.
8. The patient shows no evidence of her original disease, over seven years following operation. The cosmetic appearance is quite good. Swallowing, speech and tongue motion are normal and there is no trismus.

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I wish to acknowledge the untiring efforts and wholehearted cooperation of all the personnel of the Protestant Deaconess Hospital who participated in the care of this patient.

I also wish to express my appreciation to Dr. Fred E. Mills for his review of the pathologic material, Dr. Arthur A. Hobbs, Jr. for his review of the radiation therapy data and to Dr. Raymond W. Mino who acted as first assistant during the operation and participated in the postoperative care of the patient. The help of Mrs. Shirley Chagle and Mrs. Margaret Crowley in preparing this manuscript is greatly appreciated.

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● Hermaphroditsm and pseudohermaphroditsm are conditions in which early diagnosis and treatment are essential to avoid malignant degeneration and to allow the child some chance toward normal pyschic development.

HERMAPHRODITISM AND PSEUDOHERMAPHRODITISM

Case Reports

John F. Kustrup, M.D.

True hermaphrodites are individuals who have histologically proven gonads of both sexes. At operation these may be found as separate and distinct ovaries and testes or the same gonad may contain both ovarian and testicular tissue. The general appearance of the individual may vary from typically male to female.

Pseudohermaphrodites are individuals who have gonads of one sex but secondary sex characteristics and external genitalia presenting the appearance of the opposite sex. Therefore, the gonads of the male pseudohermaphrodite are histologically testes and the general appearance of the individual is feminine. The gonads of the female pseudohermaphrodite are histologically ovarian but the external genitals and secondary sex characteristics are masculine. This condition occurs because of a concomitant hyperplasia of the adrenal cortex.

When malignant change takes place in the gonads of the hermaphrodite, the tumor is often a dysgerminoma. Histologically, this closely resembles a seminoma of the testis.

In case No. 1, a true hermaphrodite, the habitus was a typically male. Diagnosis of a congenital abnormality was made early in life but an attempt to correct this abnormality was blocked by his parents. Medical examination was avoided until the twenty fourth year of life when a dysgerminoma developed and the diagnosis of true hermaphroditism was surgically and histologically proven.

In case No. 2, a male pseudohermaphrodite with the general appearance and external genitalia of a female, the diagnosis was made early. Bilateral orchiectomy was performed to avoid the possibility of malignant degeneration and to allow her to continue life as a female.

Case No. 1

Case No. 1 was a twenty-four year old white male who was admitted to St. Francis Hospital on May 27, 1955 complaining of abdominal pain and abdominal distention.

His provisional diagnosis was ascites due to cirrhosis of the liver. His past history revealed no serious illnesses. At the age of 5 or 6 years, after being admitted to school, he told his teacher that he was not like other boys and was not quite sure to which toilet he should go. He was referred to his family physician who advised that he be examined by a specialist but the child's parents prohibited any further examination or treatment. His family history was irrelevant. History of present illness: In the two weeks prior to admission, he complained of epistaxis, back pain, abdominal swelling, and lower right abdominal pain. His system review was entirely negative except for the fact that he sat down to urinate.

His general appearance was that of a well developed white man, six feet tall weighing 160 pounds. His face contained a heavy growth of beard. The skin of his anterior chest and shoulders was covered with hair. His abdomen was distended with prominent veins, a fluid wave, dullness on percussion, and a palpable mass in the lower right quadrant. His penis was 4 cm. long and 1.75 cm. in diameter with scrotal hypospadias or it could have represented a hypertrophic clitoris with urethra below it. There was no testicle found on the left side and the mass in his right inguinal region was assumed to be a testicle with incarcerated omentum. The folds below the urethra could have been scrotum or labia majora, small labia minora and a shallow vagina. The remainder of his physical examination was entirely negative.

Eight and one half liters of blood tinged fluid were obtained by abdominal paracentesis. This fluid was negative for tumor cells. After aspiration, the mass in the right inquinal region became more prominent and measured 4 x 5 cm. It was neither tender nor translucent and was firm and extended along the course of the inguinal canal toward the scrotum or labia.

Complete blood count, hematocrit, blood sugar, urinalysis, blood serology, and chest x-ray were all normal. His serum bilirubin was 0.5 mg., his immediate direct Vandenbergh was negative. The first serum amylase was reported at 310 units; a recheck was 70 units. Cephalin fluocculation was negative in 48 hours. X-ray of the lumbar spine and pelvis was negative for bony pathology.

Diagnoses

On the basis of the above data, the following diagnoses were made: Right indirect inguinal hernia with undecended testis and incarcerated omentum. Pelvic mass — either teratoma of undescended testis or carcinoma of ovaries. Pseudohermaphrodite. Ascites.

On June 1, 1955 the patient was operated upon with exploration of the right inguinal region thru the usual hernioplasty approach and a midline incision suprapubically for exploration of the abdomen. Findings are as follows: In right inguinal canal—a right indirect inguinal hernia with incarcerated omentum was found. Through this internal ring, 5000 cc. fluid was aspirated and a large mass palpated in pelvis and abdomen. No gonad was found. The mass in the pelvis was diffuse encapsulated except at a point where it had ruptured its capsule and extruded its contents into the abdominal cavity. It had the consistency and gross appearance of placental tissue and was equivalent in size to 3 or 4 large placentae. It was adherent to the rectum and sigmoid colon posteriorly and on the left and buried the cecum and appendix on the right. Because of its friability it was scooped out by the handful with considerable hemorrhage but less than anticipated for a tumor of this character. With the mass cleaned out, a small uterus about the size of a 12 year old, was found. The broad and round ligaments were well developed. No left tube or ovary was found as such and was assumed to have been removed with the mass. The right tube was well developed. The right ovary was atrophic measuring 1.1 x 0.4 x 0.4 cm. Enlarged lymph nodes were palpable along the aorta. The liver was not enlarged and was of normal consistency. Biopsy done with a Silverman needle. Gall bladder was normal. Kidneys were not enlarged and were of normal consistency. Examination of the external genitalia under anesthesia confirmed the findings previously reported.

In summary, therefore, the operation consisted of a right inguinal hernioplasty, abdominal exploration with removal of pelvic mass, bilateral salpingoopharectomy, and biopsy of liver.

Pathological examination of the tissues showed a degenerated hemorrhagic tumor of the ovary (dysgerminoma), poorly developed Fallopian tube, remnants of ovarian tissue, omental tissue with hemorrhage and ischemia, and normal liver.

The patient had an uneventful convalesence from the operation and was discharged from the hospital on June 10th. After discharge from the hospital he was given deep x-ray therapy. On December 31, 1955 he was readmitted to the hospital with generalized pain, nausea, vomiting, mental confusion, convulsions, and temporary blindness. His blood pressure was 196/150.

The nausea and vomiting were controlled by thorazine and his general condition improved after the intravenous administration of nitrogen mustard. There was no evidence of a focal brain lesion and it was felt that bilateral papilledema was due to renal rather than cerebral damage. An important finding was a mass in the left inguinal canal similar to that originally found on the right side. On January 16, 1956 the patient's condition had improved to the point that it was possible to explore his left inguinal canal. This was done and the mass was found to be due to a left indirect inguinal hernia with incarceration of omentum and a left undecended testicle with tumor of the testis. Left inguinal hernioplasty and left orchiectomy was performed and examination showed the type of cell in this tumor seen in seminoma of the testicle and dysgerminoma of the ovary. In view of the presence of testicular tissue in this section, it can now be definitely stated that the patient is a true hermaphrodite.

The patient's recovery from this operation was uneventful until he again develop hypertension of 190/140 with mental confusion. This again improved following the intravenous use of nitrogen mustard. One month later he had a recurrance of ascites and disturbance of vision and again he responded favorably to intravenous and intraperitoneal nitrogen mustard. His final hospital admission was from March 26 until April 27, 1956 on which day he expired.

The positive findings of the autopsy showed a small metastatic neoplasm of his right lung with pulmonary edema, generalized peritoneal extension of a primary dysgerminoma of pelvis with ascites, and metastatic neoplasm of the liver with esophageal varices and hemorrhage. The right kidney showed compression due to the huge tumor.

Case No. 2

Case No. 2 was a sixteen months old white female admitted to the hospital on September 25, 1958 because the parents had noticed a lump in her left inguinal region a few months prior to admission. The lump had disappeared after it was first noticed but recurred when she started walking. The past history was entirely negative, the birth weight being 5 pounds 13 ounces. The family history was entirely negative.

Physical examination was entirely normal except for a mass present in the left inguinal region at the level of the internal ring when the child walked or cried. The external genitalia appeared to be entirely normal. The pre-operative diagnosis was left congenital inguinal hernia.

On September 26th a hernioplasty was performed and a gonad was found in the sac at the internal ring. Thru this opening one could not identify a uterus, tubes or ovaries and the gonad appeared to arise from the lateral abdominal wall. Biopsy was performed, the gonad returned to the abdominal cavity and hernioplasty completed.

Microscopic examination of the material obtained at biopsy showed tissue covered by a wide capsule of compact fibrous tissue within which was seen an occasional capillary and a few lymphocytic cells. Immediately beneath this capsule and subdivided into smaller lobulated areas by septa which extended down from the capsule were large groups of minute nests of cells which resembled miniature testicular tubules. Under high power, these cells had all of the characteristics of immature testicular tubules, the cells resembling to some degree immature Sertoli cells. The cells stained rather deeply and had a scanty amount of cytoplasm, the nuclei appearing to be oval. The tubules were surrounded by basement membrane but the central portion of the tubules showed no change such as that usually seen in the adult form. The pathological diagnosis was immature testicular tissue.

Exploratory operation of the abdomen was performed on December 15 and biopsy of the right gonad revealed the same findings as reported for the left. On each side of the abdomen one could see a well developed spermatic cord extending to the internal ring at which site testis and epididymi were found. A peritoneal band extended from one internal ring to the other. Uterus, cervix, ovaries and fallopian tubes were not present. A bilateral orchiectomy was performed and the infant was discharged from the hospital following an uneventful convalesence. Diagnosis: Pseudohermaphrodite (male).

Conclusions

These cases emphasize the need for early diagnosis and treatment in order to avoid possibility of malignant change and to permit these individuals to follow a normal psychosexual pattern.

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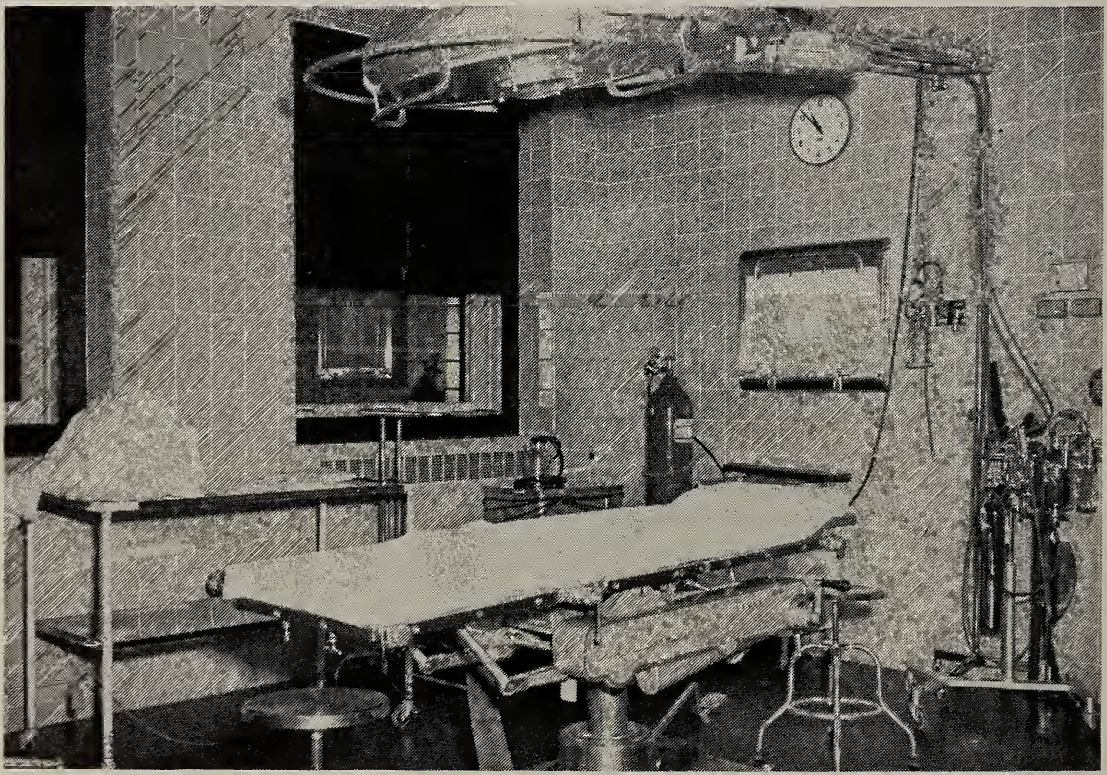

View of Operating Room — Spackman Surgical Wing, Memorial Hospital, Wilmington, Delaware

AN UNUSUAL COMPLICATION FOLLOWING AORTOGRAM

Davis A. Baltz, M.D.

Everyone who was one of his residents remembers much of Doctor Spackman to call truly admirable. To me he was the wisest and most inspiring teacher when, with the unfailing generosity of his time, he shared the problems and pitfalls of the surgical road—and the insights to be gained therefrom—through his own misadventures there.

In his memory I cite the following case.

J. B., a 67 year old white man, was referred for surgical evaluation because of progressive intermittent claudication of the entire right lower extremity and buttock for one year. The pain became incapacitating after one-half block of brisk walking and was relieved by an adequate period of rest. His past medical and family history was not significant.

Examination revealed a B.P. 130/80. The heart and lungs were not remarkable. Chest x-ray and electro-cardiogram were not significant. The abdomen was negative and the distal aorta was normal and easily palpated. The right femoral pulse was barely palpable; the remaining pulses in the right lower extremity were absent. All pulses in the left lower extremity were normal. There was definite blanching of the right foot on elevation.

The patient was advised to have a diagnostic aortogram and this was carried out under general anesthesia. Twenty cc. of 70% Urokon were rapidly injected into the aorta and films were taken. Because the x-rays were not satisfactory—the timing had apparently been inaccurate—another needle was inserted into the aorta and again 20 cc. of 70% Urokon were injected. An excellent aortogram resulted and indicated an almost complete occlusion of the right iliac artery just distal to the bifurcation of the aorta. Also, the inferior mesenteric artery and all its branches were outlined with unusual clarity. Another film taken ten minutes later showed a clear outline of both kidneys and also a remarkably clear outline of the left colon.

The patient was not discharged the following day because of minimal abdominal distention and mild gas pains. The bowel sounds were normal; the abdomen was not tender; the WBC was 5,500 with a normal differential; the Hgb. was 13 gms.; and his temperature was normal. It was felt the patient was suffering a mild ileus secondary to some retro-peritoneal irritation.

In the afternoon of the second post-aortogram day, abdominal pain and distention became definite and progressed rapidly to an extreme degree. Definite acute tenderness and muscle guarding developed which were most marked in the left lower quadrant. The pulse became rapid and weak; the B.P. dropped to 90/60;

Hgb. was 14 gms.; WBC was 12,000 with 41 stabs and 37 PMN's. His condition worsened rapidly with the B.P. falling to 60 systolic. Intravenous fluids with levophed, gastric suction, and oxygen were started. An electro-cardiogram was not significant and the patient was taken to the operating room with the diagnosis of thrombosis of the inferior mesenteric artery.

The entire left colon was found to be gangrenous. There were, however, several small oval areas measuring 3 to 8 cm. in diameter which were viable; and closer inspection revealed that the main trunk and the major branches of the inferior mesenteric artery were pulsating normally.

The large bowel was resected from the left transverse colon to the rectum and a transverse end colostomy was established. The patient withstood the procedure poorly and in spite of massive supportive therapy, including intravenous cortisone and levophed, expired approximately twenty-four hours later.

The autopsy revealed ulcerative atherosclerosis of the aorta, coronary sclerosis and stenosis of the left anterior descending branch, atherosclerosis and almost complete block of the right iliac artery. There was also evidence of adrenal exhaustion, pulmonary congestion and edema, and cardiac hypertrophy.

It is our belief that the gangrenous changes described in the left colon were due to some irritative phenonomenon secondary to the dye injected into the aorta. As a result of this disastrous series of events, several changes—which have been subsequently recommended by other authors—have been agreed upon.

First, a 5 cc. test dose of dye is injected into the aorta and a film is taken to ascertain the level and exact position of the needle within the lumen of the aorta. Secondly, if the first injection of 20 cc. of dye does not produce a satisfactory aortogram, another injection is not made. Finally, increased clinical experience has allowed a marked reduction in the number of aortograms performed. There have been no signficant complications encountered using this technique.

The Memorial Hospital, Wilmington, Delaware

● **Total pelvic exenteration has been proven effective as a treatment of extensive pelvic malignancy. One complication of this procedure is the development of perineal-intestinal fistula, the detailed management of which is described in this paper.**

MANAGEMENT OF LATE NON-MALIGNANT PERINEAL FISTULA AFTER TOTAL EXENTERATION

Harold S. Rafal, M.D.

The operation of total pelvic exenteration has emerged from the status of controversy. Though it is unpleasant for the physician to recommend, the surgeon to perform, and, above all, the patient to accept, time has proven that it affords an opportunity to save lives which otherwise would be lost. It is not the purpose of this paper to present an apologia for the procedure, describe the technic, or to submit the statistical analysis of end results in a large number of cases of pelvic evisceration. This has been done previously.

Since this procedure was first undertaken in Delaware over a decade ago, there is adequate evidence to show that some patients have been salvaged. Moreover, those cured have lived productive, if modified, lives and are glad to be alive. The purpose of the following case presentation is to describe the management of a perineal-intestinal fistula which developed at a date remote from the initial pelvic exenteration procedure. Details of management which will simplify treatment and prevent recurrence of this harrassing condition are described.

It is further suggested that the technic described may be applicable to intestinal fistulae, malignant or non-malignant, appearing anywhere in the abdomen. However, though applicable, it is not recommended for many fistulae which are best managed by direct resection and primary anastomosis.

The principle of exclusion of the fistulous tract with by-pass anastomosis is not new, and no claim for originality is made. The present day surgeon owes a debt to those pioneers of the past who, by trial and error, evolved methods of treatment which seem so obvious today.

Case Report

The patient was a 51 year old, gravida 2, para 2, white woman when first seen by Dr. John F. Hynes in February 1952. Her chief complaint was vaginal discharge of one month duration. She was treated at a university center for squamous cell carcinoma of the cervix in 1936. She had received 1600 r of external radiation to each of four pelvic fields. This was followed by 5400 mgm hrs. in two radium treatments at about ten week intervals of 3000 mgm. hours and 2400 mgm. hours respectively.

System review was essentially negative.

Physical examination was normal except for the pelvic findings. There was a moderate atrophy of the external genitalia. The vaginal introitus admitted two fingers without great difficulty. About 4 cm. within the introitus, an elevated hard mass was encountered. This involved chiefly the anterior vaginal wall, and extended somewhat on the left lateral vaginal wall. It was about 3 cm. in linear extent. Above this there was slight induration of the vaginal wall, but no appreciable mass. The vaginal apex was somewhat narrowed, ment. The mucosa in the region of the cervix and distal to it was red, inflamed, and bled slightly on examination. No distinct tumor was found in this location. The surface of the protruding mass was ulcerated. Biopsy was obtained without difficulty and without pain. On combined recto-vaginal examination, there was bilateral parametrial infiltration, somewhat more prominent on the left side. This, however, was not fixed to the lateral pelvic wall. There was induration surrounding the upper third of the vagina, particularly anteriorly behind the urinary bladder. The biopsy was reported as revealing squamous cell carcinoma. Approximately 50% of the cells examined were undifferentiated. The impression was that the patient had a recurrent carcinoma of the cervix.

In view of the previous heavy irradiation, it was felt that it would not be possible to control the recurrence by roentgen therapy without producing extensive radiation necrosis. Accordingly, surgical extirpation was recommended by us and accepted by the patient.

First Operation

Operation was performed on March 20, 1952. On the left antero-lateral wall of the vagina there was a prolific tumor mass measuring about 3½ cm. in diameter. This mass infiltrated the base of the bladder and the left parametrium. The extension of the visible tumor in the excised specimen showed that it extended up to the vaginal apex, and had come close to the pelvic wall. A very thin shell of grossly uninvolved normal tissue separated the tumor mass from the line of transection. The tumor itself however was not transected. There was no evidence of infiltration of the tumor into the bladder mucosa or into the rectal mucosa. The uterus was small and atrophic. Upon opening the uterine cavity, a lacrimal duct probe could be passed down the canal to a point at the apex of the vagina. In view of these findings, it would seem that this represented a recurrent carcinoma of the cervic rather than radiation carcinoma of the vaginal wall. On abdominal exploration, there was no evidence of enlarged lymph nodes along the aortic, hypogastric, or external iliac vessels. There were several plaques on the mesentery of the small and large bowel which appeared to be calcified mesenteric lymph nodes, being stony hard in consistency and whitish in appearance as visualized through the overlying peritoneal layer. The gall bladder contained numerous calculi of varied sizes. The right kidney was ptotic, being found at the level of the third or fourth lumbar vertebra. The left kidney was normal in position. There was no gross evidence of metastatic deposits in the liver. The spleen felt normal in size, shape, contour and position. The ureters were not dilated. The right kidney, the only one which was directly visualized, appeared to be completely normal except for its low position.

Total Exenteration

A total pelvic exenteration was performed with removal of the bladder and lower ureters, internal and external genitalia, and rectum. Lymph node dissection was started at the bifurcation of the aorta, carried laterally along the external iliac vessels to the inguinal ligaments. The obturator neuro-vascular bundles with lymph node bearing fat pads were removed. The hypogastric vessels with accompanying lymph node bearing tissues were excised. En bloc mobilization of all these structures was carried down to the level of the levator muscles. After reconstruction and closure of the abdomen, dissection from the perineal approach was performed. An elliptical skin incision from the mons veneris to the tip of the coccyx was made. A radical vulvo-vaginectomy was incorporated with a standard abdomino-perineal resection, thus removing the total specimen en bloc from below.

The reconstruction was effected as follows:

1. The ascending colon and terminal ileum were isolated from continuity with the intestinal tract. Intestinal continuity was resored by anastomosis of the proximal end of the transected ileum to the transverse colon.

2. The transected end of the ascending colon was sutured over and the distal cut end of the terminal ileum exteriorized in the right lower quadrant to function as a urethral orifice.
3. The cut ends of the ureters were then anastomosed to the isolated ascending colon by the Coffey II technic.*
4. The transected sigmoid was exteriorized in the left lower quadrant as a permanent end-colostomy.

In this type of extensive resection there is no tissue available to peritonealize the pelvic floor. The huge pelvic and perineal defect oozes extensively and must be packed. Inevitably, this leads to an undesirable situation wherein coils of intestine are in contact with the packing. The packing is inserted from below after completion of the perineal dissection and removal of the specimen.

During the post operative period the packing is slowly removed so that an inflammatory membrane is developed to serve as the pelvic floor.

The operative procedure took 8½ hours, and was well tolerated. At no time did the patient's systolic blood pressure fall below 100 mms. of mercury, nor did the pulse rate rise above 110 per minute. Four and one half pints of blood were given during the procedure, two and half pints during the abdominal portion and two more pints were given rapidly during the perineal part of the dissection, which is usually quite bloody.

Pathology Report

The specimen consisted of the pelvic viscera in one large mass of tissue, including the sigmoid colon, rectum, and anus, the uterus, tubes and ovaries, entire vagina and vulva, the bladder and urethra, and all of the surrounding fatty areolar tissue. In the left posterior wall of the vagina was a fungating, granular tumor mass about 2 cm. in diameter projecting about 1 cm. above the surface of the vagina. This tumor mass penetrated into the base of the bladder, but did not penetrate entirely through into the bladder lumen. The uterus was small, and on opening it and probing down to the cervical canal, an opening into the vagina was found just medial to the tumor mass. The cervix as such could not be demonstrated. The tumor mass lay about 1 cm. lateral to the apparent opening of the cervix into the vagina. There was no apparent infiltration into the rectum, but there was slight infiltration laterally into the left parametrium. The dissection appeared grossly to be wide of tumor. No lymph nodes could be palpated in this specimen, but several separate pieces of fatty areolar tissue were also submitted and two lymph nodes, rather small, were found in this tissue and were grossly negative for tumor.

Microscopic Results

Histological examination showed the tumor noted in the gross to be made up of sheets and clumps of atypical squamous epithelial cells, many of which were large and of bizarre shape and size. Mitotic figures were numerous. The tumor infiltrated into the parametrium and into the wall of the bladder but did not penetrate it. The lymph nodes in the gross did not show any evidence of metastatic deposits. Excision of the tumor appeared to have been complete.

Diagnosis

Recurrent epidermoid carcinoma of the cervix, grade III.

Post operatively the patient developed urinary drainage through the perineal defect after the removal of the packing. This ceased spontaneously within a week. Healing and convalescence was then satisfactory. The new bladder, constructed from isolated ascending colon and terminal ileum, was managed with an indwelling Foley catheter. The catheter, which the patient herself changes weekly, is intermittently drained. On occasions, when the patient does not have access to toilet facilities, such as on long trips, the catheter is connected to a rubber urinal strapped to the thigh. The patient has experienced no difficulty in managing the urinary or fecal stomata.

The patient returned to work as an office secretary on 8/13/52, approximately five months after operation. She had periodic post operative visits. On Sept. 1, 1954, an office note quotes the patient as saying that she "doesn't miss a day from work." There were asymptomatic hernias present about both exteriorized segments of intestine, i.e. ileum and sigmoid colon. There was also an asymptomatic herniation of the lower abdominal incision. The patient has had occasional attacks of gall bladder colic but has refused cholecystectomy.

In July 1957, more than five years after her initial procedure, the patient was readmitted to the hospital with the chief complaint of profuse perineal drainage of one week duration. The discharge consisted of intestinal contents, and was causing markedly painful excoriation of the perineum and buttocks. On examination there was an intestinal fistula at the apex of the perineal defect admitting two fingers. Multiple punch biopsy of the lips of the fistulous tract were reported as granulation tissue.

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*(Since this patient was operated upon, the reconstruction technic has been modified. At present, a direct mucosa to mucosa anastomosis is used to joint the ureters to a short, isolated, exteriorized loop of ileum; the so called Bricker operation).

Findings

Operation was performed on 7/19/57. The perineal defect created at the previous pelvic exenteraction operation revealed the presence of a small intestinal fistula at its apex. The defect was quite large. The finger could be readily inserted into the bowel in either direction. Small intestinal contents had been making exit from this defect. On abdominal exploration, the patient had numerous adhesions in the pelvis, including the small bowel and omentum. Exploration of the general abdominal cavity and para-aortic area and liver revealed no evidence of recurrent carcinoma of these sites. There was no peritoneal implants observed. Carcinoma was not detected in the perineal defect. A punch biopsy was again taken from the lip of the fistulous stoma. The patient had gallstones present in the gall bladder.

Technique Used

Before draping the patient, she was placed in the lithotomy position, and two catheters were inserted through the fistulous tract. Each was passed in opposite directions—i.e. into the afferent and efferent bowel. A long strand of black silk was sutured to the end of each catheter. The perineal defect was then packed to prevent the catheters from slipping out. The patient was then placed in the supine position and the abdomen prepared and draped in the usual manner. The abdomen was opened through a right paramedian rectus incision. It was noted, as was anticipated, that there was no posterior rectus sheath or transversalis fascia below the level of the previous transverse incision. These structures had been removed during the process of pelvic exenteration.

Hemostasis was obtained by clamp and ligature of #000 plain catgut. Numerous adhesions were divided by sharp and blunt dissection. The catheters previously placed into the intestinal lumen through the perineal fistula were readily palpable. The circulating nurse removed the packing, which had been left long, and made traction on the black silk sutures. This removed the catheters separately. In this way, the fact was verified that they had been lying proximal and distal to the fistulous opening. These two loops were then freed of adhesions. No attempt was made to free the fistulous tract by dissection. The bowel was transected about 4" proximal and distal to the fistula. The cut ends closest to the fistula were then turned in with running sutures of #000 chromic catgut, and a row of interrupted Halsted mattress sutures of #000 black silk, leaving a defunctionalized loop of small intestine approximately 8 inches long in the pelvis. The two remaining ends were then anastomosed by end-to-end technique. A slight amount of ooze was present. A drain was placed in the pelvis and brought out through a stab wound made lateral to the incision. The sponge count was taken and found to be correct. The abdomen was then closed, using through-and-through sutures to the fascia in the lowermost part of the incision up to the point where a transverse incision had been previously made. Above this level, a two-layer closure was effected, using interrupted sutures of #0 chromic catgut. Three slips of rubber dam drain were placed in the subcutaneous fat layer because of contamination of the abdominal wall from the colostomy and the ileostomy. The patient received one pint of blood during the procedure, which was well tolerated.

The patient had an uneventful post-operative course. The perineal discharge of the intestinal material stopped immediately after operation and the excoriation of the perineum and buttocks healed promptly. Discharge of mucous from defunctionalized fistulous bowel continued for several weeks but slowly decreased so that at present the patient is unaware of any troublesome discharge.

The enforced hospital admission afforded an opportunity to evaluate the patient's urinary tract by x-ray and laboratory studies. These revealed completely normal blood chemistry findings. An intravenous pyelogram was essentially normal. The patient had received no treatment for control of her urinary infection or maintenance of metabolic equilibrium in the interim between the first and second procedures.

Discussion

Important advantages inherent in the principle and technic of by-passing the fistula are as follows:

1. Past experience has demonstrated that complete mobilization of the fistulous tract with direct closure, even with resection and primary anastomosis, resulted in surprisingly high incidence of recurrence of fistula formation.

   This may be explained as follows:

Since there is still no pelvic floor after resection of the fistula, another loop of intestine fills the gap. This loop may form a new fistula since it will be exposed to the same factors of attrition which initially caused the fistula. By leaving the initial fistula undisturbed, it serves as a permanent seal of the perineal defect.

2. A fistula may be the result of recurrent malignancy. If this be the case,

the principles of cancer surgery dictate that it be left undisturbed unless wide resection, giving hope for cure, is feasible. If this is not possible, leaving the fistula undisturbed obviates dissemination by seeding and massage. Moreover, it may be possible to treat the local recurrence in the fistulous rim by some form of radiation therapy. Fortunately, in this case, recurrence was not the problem.

3. The insertion of large catheters proximally and distally into the efferent and afferent loops is a refinement of technic having considerable merit. Following massive procedures, such as pelvic exenteration, in which extensive maneuver and extensive de-peritonealization are necessary, abundant adhesion formation and agglutination of intestinal loops must be expected. Almost inevitably coils of intestine are densely adherent, overlapping, and coursing in all directions. Without guideposts, such as afforded by the previously placed catheters, it often becomes necessary to completely unravel the whole perplexing mass of matted intestines in order to properly identify the fistula. This may become a herculean task, occasionally leading to abandonment of the procedure in despair. Also, the possibility of inadvertently entering the bowel lumen unnecessarily increases with each adherent loop requiring mobilization. Having palpable catheters in place permits the surgeon to approach the segment of fistulous intestine by "touch," so to speak. This reduces dissection to a minimum and obviates unnecessary handling of bowel, bleeding, and inadvertent entrance into unoffending loops of intestine.
4. Should disseminated intra-abdominal tumor recurrence be present, here again undesirable manipulation of tumor may be kept to a minimum.

I have not seen this refinement described, but there is little doubt that it has been used elsewhere in the past, and recorded. If so, no harm is done by re-emphasis at this time.

Later Complications

Following the second operation, the patient, as noted above, had a moderate amount of perineal mucous discharge which progressively decreased. She now has a marked degree of prolapse of the intestinal mucosa into the perineal defect, but it does not protrude externally. She states that "if you didn't tell me it was there I wouldn't know it." Should it become troublesome, amputation of redundant bowel from below should present no problem.

Another interesting aspect of her present status is the opportunity of reconstructing a functioning vagina, utilizing the mucosa of the fistulous loop.

The patient has recently been questioned about this point. However, she is now almost 60 years of age, her husband is in poor health, and resumption of intercourse apparently does not interest her.

She is quite vigorous and working daily.

SUMMARY

1. A case history of recurrent carcinoma of the cervix, 15 years after successful roentgen therapy, is described. The surgical treatment of this condition by pelvic exenteration is briefly discussed.
2. The management of a perineal small intestinal fistula is described in detail with a description of a refinement of technic. The benefits of the procedure are emphasized.
3. The urinary tract status of the patient five years after ureteral transplantation by Coffey II technic is presented.
4. The opportunity of using by-passed intestinal prolapsed loops through a perineal defect for vaginal reconstruction is mentioned.

Guest Editorial

RESOLUTION

Board of Directors, Memorial Hospital

IN TRIBUTE TO THE MEMORY OF
JAMES GUIE SPACKMAN

The Board of Directors of The Memorial and Eugene duPont Memorial Hospital, in annual meeting assembled, record with sorrow and profound regret, the passing, on April 9, 1959, of James Guie Spackman, M.D., who for more than forty-three years served as a member of the surgical staff of this hospital.

Doctor Spackman received his Doctorate in Medicine from Hahnemann Medical College and Hospital of Philadelphia in 1912. Following an internship of one year he was appointed to a residency in general surgery in that institution under the tutelage and guidance of William B. Van Lennep, Professor of Surgery and Surgeon in Chief.

In 1915 Doctor Spackman became a member of the attending surgical staff of our institution, then known as the Homeopathic Hospital.

In 1918 Doctor Spackman was commissioned as an officer in the Medical Reserve Corps and assigned as a member of the surgical staff of the Army Medical Center at Vichy, France. Upon completion of this assignment he resumed his duties in our hospital.

In due time Doctor Spackman became director of the surgical department of our hospital and later a Founder member of the American Board of Surgery. In 1950 he relinquished his responsibilities as the director of the surgical department and became chief consultant in surgery.

To Doctor Spackman must go all honor and full credit for having brought into being an alert and competent surgical staff, composed of surgeons, physicians, specialists, nursing and other personnel.

The records reveal that as a result of Doctor Spackman's activities the demands upon the hospital for expansion in all departments were immediate and pressing.

With funds contributed by philanthropists, the community at large and patients, this board endeavored to provide the facilities and staff with which to meet the ever increasing requirements.

Through the leadership of Doctor Spackman, the first approved surgical residency in Delaware was established in this hospital as was the first fully accredited cancer clinic. Through his interest and influence highly qualified specialists were attracted to our hospital staff.

The years which have passed since the turn of the century have been referred to as the golden era of medicine. Knowledge gained through research has made possible, advances in anesthesiology, surgical techniques, laboratory procedures and therapy. Emphasis upon the sound education and adequate training of physicians and surgeons have had an enormous impact upon the quality of medical care now available to the public.

Doctor Spackman not only participated personally in the application and use of the new methods and techniques but by example and precept inspired his staff and students to do likewise.

As a Fellow of the American College of Surgeons and through his association with colleagues in other clinics he brought to our hospital first hand knowledge of the advantages and pitfalls of that which was new or different.

Doctor Spackman accorded to the poor and unfortunate the same considerate and thorough attention as he did to those who possessed means and influence. In manner he was rather reserved. With associates he was friendly and witty. His analysis of colleagues was shrewd and his characterization of their peculiarities amazingly apt.

It is our conviction that Doctor Spackman's outstanding contribution to this hospital and to this community was his unfailing example of professional integrity. Through his students, Doctor Spackman's influence will extend through the years.

An example of his devotion to the highest principles of the medical profession may be found from an article written by Dr. George T. Pack, noted surgeon a quotation which Doctor Spackman included in his annual report for 1948, as chief of the surgical department.

> *"With the knowledge of the inevitability of death from cancer that is not treated, it seems unnecessary to state that no surgeon would refuse a patient the slightest chance for a cure, or even relief, because of fear of criticism or failure, or an unnatural pride in low figures for operative mortality. Nor should any surgeon attempt to play God and decide arbitrarily, that a certain cancer patient had lived a sufficiently long life, or that he had so few remaining years of even normal life expectancy, that operation, at best, would hardly be worth while."*

Be it resolved that this expression of our sentiments of regard and respect be made a part of the minutes of this Board and a copy thereof be sent to the bereaved family.

April 28, 1959

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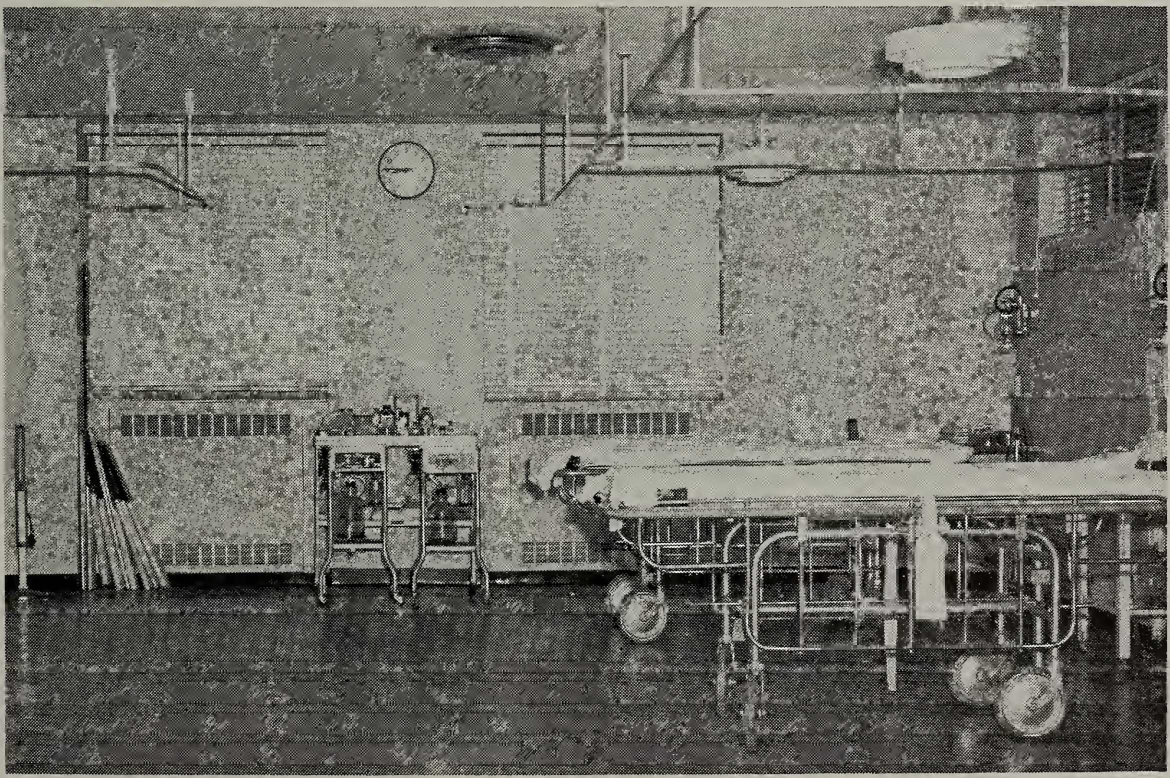


View of Recovery Room — Spackman Surgical Wing, Memorial Hospital, Wilmington, Delaware

DOCTOR JAMES G. SPACKMAN, SURGEON-TEACHER

Frank A. Jones, M.D.

There is no doubt that Dr. James G. Spackman was a master surgeon. He was a brilliant clinician, a keen diagnostician, and a proficient technician. He was ever alert to the varied aspects of disease and often warned the less experienced to be on guard for signs and symptoms that foreshadowed a complication. Because of his wide experience he developed the art of imperturbability and equanimity so well described by Osler in his *Aequanimitas*. When a set of circumstances seemed to pose a problem, Dr. Spackman was able to choose the proper course whether that be action or apparent purposeful inaction. This was reassuring and comforting to his patients and their families on the one hand and served as a magnetic influence upon his resident staff.

In referring to Dr. Spackman as a master surgeon, it should be emphasized that many of his major procedures were performed successfully at a time when the outcome depended more upon good surgical judgment and technique because the adjuncts of whole blood transfusions, antibiotics, fluid and electrolyte therapy, and the wide range of anesthetic agents were not so readily available. While it must be said that there is no substitute for good surgical judgment and technique, the adjuncts named sometimes mean the difference between success or failure. Therefore, more credit is due Dr. Spackman for his successes. It is fitting to state that a patient with adenocarcinoma of the head of the pancreas operated upon by Dr. Spackman in the early years of the 1940's lived for more than three years following a two-stage operation; one with adenocarcinoma of the transverse colon with extension to the stomach has remained well and free of that disease from 1940 until the present time and that an infant born in 1941 with a large congenital hernia of the left diaphragm survived the initial transabdominal repair and subsequent repair of the ventral hernia (initial skin closure was done purposely) about a year later and is living and well now.

While it was generally known that Dr. Spackman was a master surgeon, perhaps, it was not generally known that he was also a natural born teacher. His close associates and all his resident staff appreciated his ability to teach by precept and by example. He was eager to pass on to others as much as he could of what he had learned by experience in the school of "hard knocks." Because of his consideration for patients and his interest in the growth of his residents he would occasionally say, "You do not need to get your fingers burned where mine have already been burned."

At this point he would warn of inherent dangers of a disease or of a surgical procedure. It might have been a matter of surgical judgment as to the appropriate time and circumstances for operation upon a patient with thyrotoxicosis or just how far one should go during the procedure, such as ligation of the vessels alone or a resectional procedure in addition. (This was prior to the use of antithyroid drugs, of course). The whole list of general surgical procedures was well covered in and outside of the operating room during the course of a surgical residency. Nor did the period of instruction cease with the completion of the residency, for he realized that medical and surgical educations are a continuing process and was always glad to be consulted relative to any surgical problem in which his experience had been broad. This covered a lot of ground.

Dr. Spackman was always neat and tidy. This applied equally as well to his dress as to his surgical technique, dressings and redressings. He was mild mannered but firm. He insisted upon quietness in all parts of the hospital but especially in the operating room suite. Here he was nearly always deeply earnest and serious for he felt it was a requirement for the avoidance of errors in technique and judgment. He insisted upon the use of the best tools and suture materials and demanded respect in the use of delicate surgical instruments and their appropriate use at all times. He was almost uncanny in his method of maintaining an alert and wide-awake attitude on the part of his surgical assistants. It rarely required more than an occasional use of the words, "store, store," on his part to have continuous, unremitting exposure of the operative field. For those unfamiliar with the term, it originated as the method of getting attention in a general country store that carried dry goods, notions, groceries, hardware, and so forth and, perhaps, housed a third-class post office, the whole being operated by a single clerk every day but Saturdays.

He was prone to depend upon records or notes as a check list in his everyday work and for that reason provided each surgical resident with a note book. This was his way of making very sure that he could depend upon us to remember to do the things he asked of us.

He was precise and generally accurate in his description of the size of surgical lesions. A centimeter ruler was always present in the tissue room and he usually provided each resident with one so that standard units of measurement were referred to rather than certain objects, such as a lemon, orange or grapefruit.

He urged surgical residents to see and study all tissues removed at operation and to study the fixed, prepared slides with the microscope. This also applied to x-ray pictures both preoperatively and postoperatively. The appropriate film (or films) was also available for review during the course of the operation. The pathologist and/or roentgenologist were often invited to the operating room to view the pathology and to offer opinions and advice as indicated.

Dr. Spackman was accomplished in taking histories and recording the physical findings. These documents were short and complete and contained the pertinent data. The questions—what?, when?, where and how?—were included. An additional *must* in the case of female patients was the inclusion of a statement regarding the date of the last menstrual period.

The physical examination was done in a systematic fashion. Too great emphasis cannot be placed upon this point of orderly procedure. To do otherwise would lead to errors of omission and possibly an incorrect diagnosis or no diagnosis at all. His method of examining an abdomen is worth describing. The patient is positioned flat in bed in a good light with hands folded across the chest and legs straight. The lower chest, entire abdomen and upper thighs are exposed for inspection. The patient is requested to breath deeply and then to cough. Femoral areas are inspected along with the entire abdomen, examiner on patient's right. Gentle palpation is begun in area suspected of being normal, gradually progressing to area suspected of being diseased. Percussion is then done and followed by auscultation. Pelvic and rectal examinations complete the clinical part of the procedure. The point of having the patient breathe deeply and cough are of special value in locating the area of pain and tenderness. The procedure of inspecting all the abdomen and especially the femoral regions makes that procedure complete.

Preoperative and postoperative orders were written legibly, in large letters and on every other line. The orders of special importance were underscored. Rather than write p.r.n., an order for morphine sulfate was often written to be given at a specified time of night or day unless the patient was actually sleeping at those hours. Orders of unusual significance were also brought to the attention of the nurse in charge and explained in detail.

Dr. Spackman kept abreast of the advancements in surgery through reading and visiting large medical centers. His personal library contained copies of the best books and monographs. We were made welcome to read these books whenever the time permitted. Important articles in the surgical journals were pointed out as being very worthwhile reading material.

Much has been written in surgical journals about common duct injuries in surgery of the biliary tract. Surgical residents at the Memorial Hospital have been warned about the grave nature of these injuries to the extent that so far as I know there has been only one injury in nineteen years. It, therefore, is appropriate to list Dr. Spackman's ideas about how these injuries can be avoided and they are: (1) Operate with good relaxation of the patient; (2) Insist on good exposure at all times; (3) Ligate individually the cystic duct and cystic artery and only after the common duct and common hepatic duct have been demonstrated.

He had very strong feelings against unnecessary operations. He realized the dangers of unforseen, unavoidable and fatal complications. If surgery were indicated these risks were taken as a necessity and he often stated: "The punishment should fit the crime." He considered the economic hardships resulting from time lost from work and from the expense of hospital and doctors' bills due to a unnecessary operation.

He had a sense of pride in correct diagnoses and was willing to make the effort and take the time to arrive at a correct decision rather than "operate and see." Finally, he set a standard that he would be pleased to have any first-rate surgeon visit the operating room and see what procedure was being done at any time of day or night. He considered it "poor sport" to remove a normal appendix and compared it to "shooting a barnyard hen at close range with a shotgun" on the one hand versus big game hunting on the other hand.

From the medicolegal angle he was always careful about patient identification and routinely checked chart information against patient's statement regarding the side on which a hernia existed prior to the administration of the anesthetic!

With all of his qualifications as a surgeon and teacher, Dr. Spackman had qualities of leadership. Through and by the help of his associates the surgical program at the Memorial Hospital has been approved for four years of surgical training. The operating room suite in the new wing of the hospital has been named in his honor and serves as a memorial to him now and will so serve in future years. His influence extended to all the branches of surgery and medicine and even into the school of nursing and into the administrative field. It is reflected in the institution as it stands today and it will continue into the future. It is hoped that the sound fundamentals of surgery that he practiced and taught will be perpetuated into future generations and in fact never die.

Dr. Spackman's Residents

"The great teacher is he who will admit the existence of real problems in his own experience and through counsel, encouragement and example help those whom he trains to surpass those who teach."

These words from a recent editorial in one of our surgical journals seem singularly appropriate as one contemplates the spirit that motivated Dr. Spackman's surgical life. "*Counsel, encouragement, and example*"— these were lavishly offered to all who would partake of them. Indeed in the vernacular of the day, one might say that for him this teaching habit was a compulsive thing and undoubtedly as rewarding to him as it was enriching to the recipient. A natural and inevitable consequence of this compulsiveness to teach ultimately found its expression in a more formal and more elaborate way — a surgical residency program. It first received accreditation on a three-year basis in 1940. In the years since then some twenty young men have completed the course of training, received the coveted certificate of the American Board of Surgery, and without exception, I believe, gone on to a successful career in their chosen field.

Their several contributions to this issue of the Journal speak for themselves. In scope, variety and scholarliness they bear witness to the wholesome and inspiring influence of their resident days and to the truly great teacher who guided them through this period. It was a time when close personal contact between teacher and student was not only possible but was exploited for its unusual and reciprocal benefits. It is obvious that Dr. Spackman's dedication as a surgeon and as a teacher of surgery has left an indelible mark on all who were privileged to serve under his leadership. He would undoubtedly have agreed with Dr. Wangensteen who had this to say on the occasion of a twenty-fifth anniversary dinner in his honor —

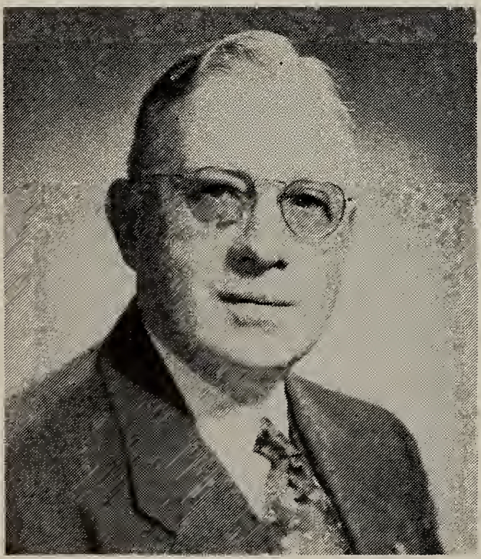
"I have become quite accustomed and reconciled to the frequency with which my efforts are being surpassed by the more significant contributions of some of my distinguished proteges. But is that not the hope and fate of all teachers?"

John C. Pierson, M.D.

JOHN C. PIERSON, M.D., F.A.C.S.

1924 - 1929

Born in Wilmington. Premedical education at the University of Delaware. M.D. Hahnemann Medical College 1923. Internship, Hahnemann Hospital, Philadelphia 1923-24. Graduate work in Obstetrics and Gynecology, New York Lying-in Hospital 1929. Diplomate, American Board of Surgery. Currently, Director, Department of Surgery, Memorial Hospital, Wilmington, Delaware.



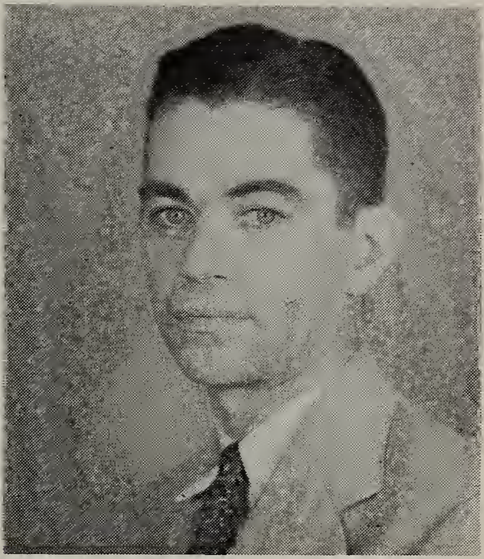
WALLACE M. JOHNSON, M.D.

1923 - 1924

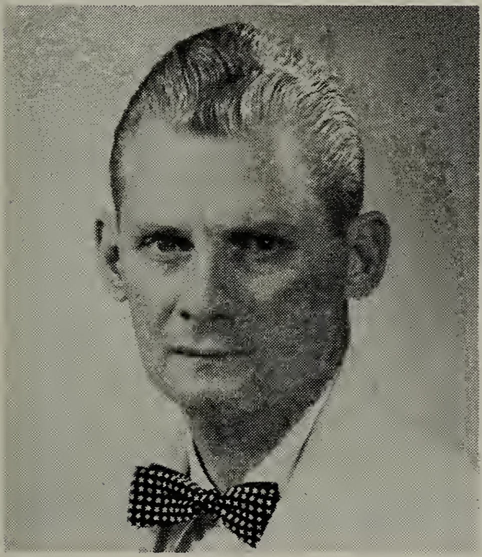
Born in Uniontown, Pennsylvania. Premedical education at University of Michigan. M.D. Michigan 1922. Internship, Homeopathic Hospital, Wilmington 1922-23. Served in World War II in E.T.O. and U.S. 1941-46, Lieutenant Colonel. President of Delaware State Homeopathic Medical Examining Board; Member, Medical Council of Delaware. Formerly, Mayor of Newark, Delaware.

PAUL A. SHAW, M.D.

1929 - 1930



Born in Wilmington. Premedical work at University of Delaware. M.D. Hahnemann 1928. Internship at Homeopathic Hospital, Wilmington 1928-29. Training in radiology, Memorial Hospital, Wilmington 1943-46. Diplomate, American Board of Radiology 1946. U.S. Army 1942-43. Director, Department of Radiology, Memorial Hospital, Wilmington. Consultant Radiologist, Medical Department, E. I. duPont de Nemours and Company.



JOHN H. YEAMAN, M.D.

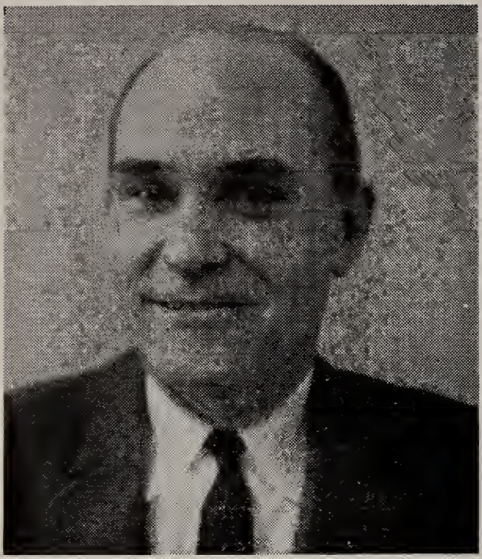
1935 - 1938

Born in Philadelphia. M.D. Hahnemann 1934. Intern Homeopathic Hospital, Wilmington 1934-35. Captain, Army Air Force 1942-45. Graduate student, Department of Dermatology, University of Pennsylvania 1951-52. Resident in Dermatology, Philadelphia General Hospital 1952-53 and Jefferson and Pennsylvania Hospitals, 1953-54. Dermatopathology, University of Pennsylvania 1954-55. Diplomate, American Board of Dermatology and Syphilology; Fellow, American Academy of Dermatology. Dermatologist, Bridgeton Hospital, Bridgeton, New Jersey. Consultant Dermatologist, Newcomb Hospital, Vineland, New Jersey.

THOMAS J. BULGER, M.D., F.A.C.S.

1938 - 1940

Born in Brooklyn. M.D. Columbia 1936. Surgical intern, French Hospital 1936-38. Diplomate, American Board of Surgery. Formerly Director of Surgery, Department of Atomic Energy Commission, Hanford, Washington. Currently Attending Chief, Surgery, Memorial Hospital; Chief of Surgery, Wilmington General Hospital; Assistant in Surgery, St. Francis Hospital; Instructor in Surgery, Hahnemann Medical College; Consultant Surgeon, E. I. duPont de Nemours & Company.



FRANK ALLEN JONES, M.D., F.A.C.S.

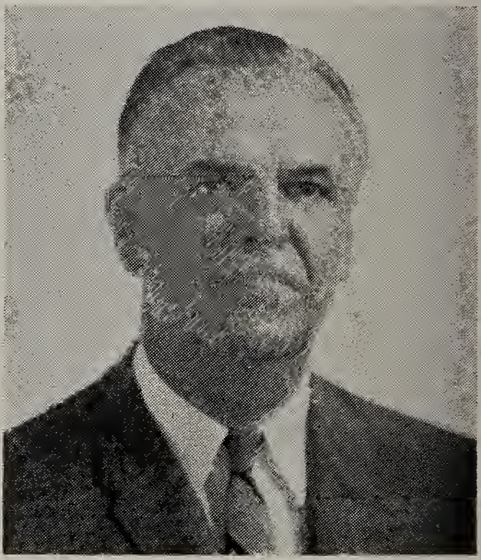
1940.-.1943
1946.-.1947

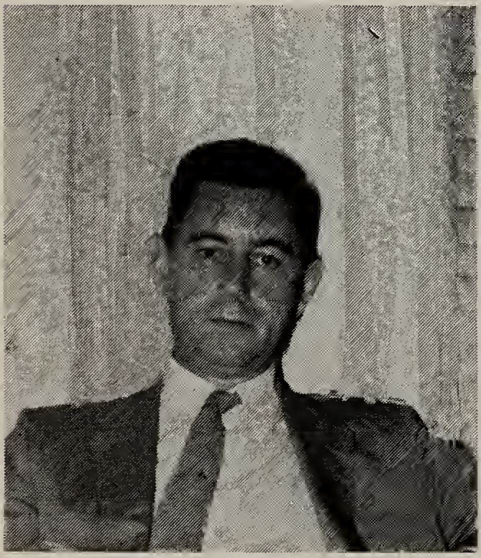
Born in Winton, North Carolina. Premedical education at University of North Carolina. M.D. Jefferson 1937. Intern 1937-39 and Chief Resident 1939-40, both at Graduate Hospital, University of Pennsylvania. Diplomate, American Board of Surgery, 1949. Captain, U.S. Army Medical Corps 1943-46 a surgeon in evacuation hospital, E.T.O.; Bronze Star. Currently, Attending Chief in Surgery and Associate Thoracic Surgeon, Memorial Hospital.

JOHN F. KUSTRUP, M.D., F.A.C.S., F.I.C.S.

1940 - 1941

Born in Trenton, New Jersey. M.D. Georgetown University 1930. Internship, St. Francis Hospital, Trenton 1930-31. Graduate student in surgery, Graduate School of Medicine, University of Pennsylvania 1939-40; graduate work in urology, Cook County Hospital Graduate School. Diplomate, American Board of Surgery. Formerly, Consulting Surgeon, State Hospital and State Prison Hospital, Trenton, New Jersey. At present, Associate in General Surgery, St. Francis Hospital; Surgeon, Orthopedic and Trenton General Hospitals. Past President, Mercer County Medical Society.





LESTER J. WALLMAN, M.D.

1941 - 1942
1945 - 1946

Born in New York City. Premedical education at Yale University. M.D. Yale 1938. U.S. Army 1942-45. Diplomate, American Board of Neurological Surgery 1950. Currently Associate Professor of Neurosurgery, University of Vermont; Neurosurgeon, DeGoesbriand Memorial and Mary Fletcher Hospitals, Burlington.

JOSEPH P. SELTZER, M.D., F.A.C.S.

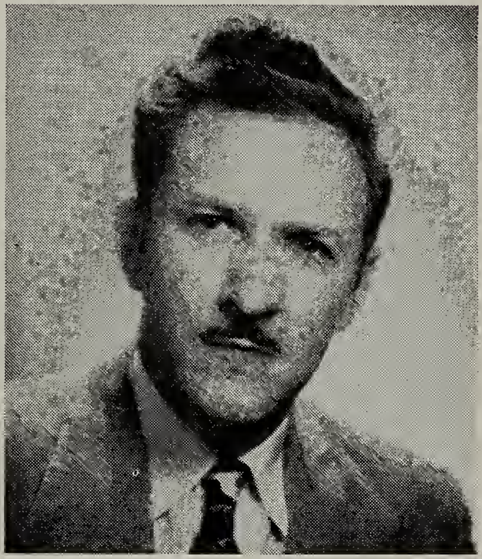
1942 - 1944

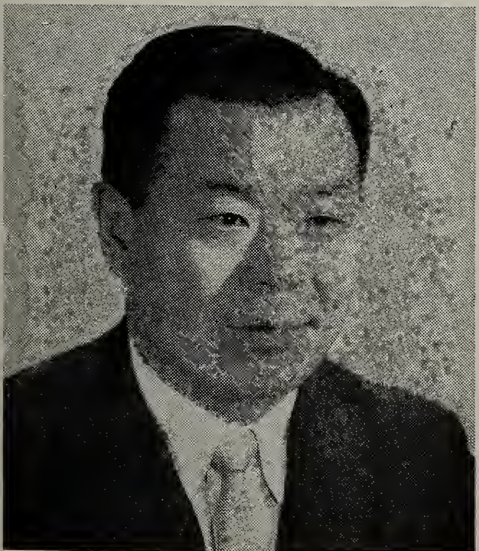
Born Fairfield, Maine. Premedical education at University of Maine. M.D. Jefferson College, 1937.

ROBERT ARTHUR MINO, M.D.

1943 - 1945
1947 - 1948

Born in Anawalt, West Virginia. Premedical education at Concord College and University of West Virginia. M.D. Yale 1942. Internship Memorial Hospital, Wilmington 1942-43. Assistant Resident in Oncology, Memorial Hospital, New York 1945-46. Formerly member of surgical staff, Memorial Hospital, Wilmington and Clinical Instructor in Surgery, Hahnemann Medical College. Diplomate, American Board of Surgery 1950. Currently on active surgical staff of Protestant Deaconess and Welborn Baptist Memorial Hospitals, Evansville, Indiana and active in the American Cancer Society.

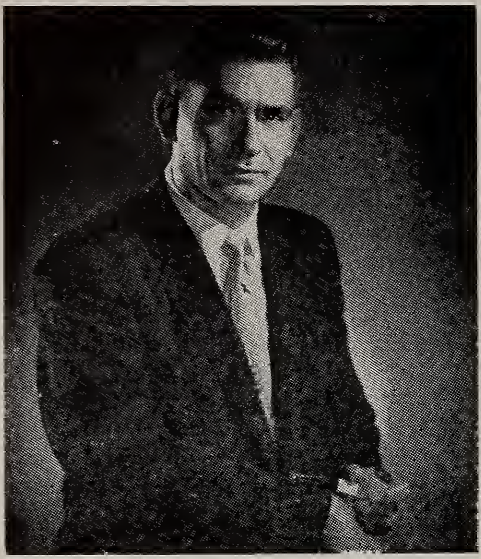




C. H. KIM, M.D.

1945

Born in Kosanchin, Korea. Premedical education at University of Minnesota. M.D. Jefferson 1941. Internship at St. Joseph's Hospital, Philadelphia 1941-42. Surgical residencies: Doctor's Hospital, New York 1941-42; Memorial Hospital, New York 1944; Holy Cross Hospital, Salt Lake City, Utah 1950-51; resident in thoracic surgery, City of Hope, Duarte, California 1951-52. Formerly Staff Surgeon, Healthwin Hospital, South Bend, Indiana 1946-50. Currently on the staff of the Queen of Angels, Temple, Morningside, View Park Community, and Bella Vista Hospitals, Los Angeles.



HAROLD S. RAFAL, M.D., F.A.C.S.

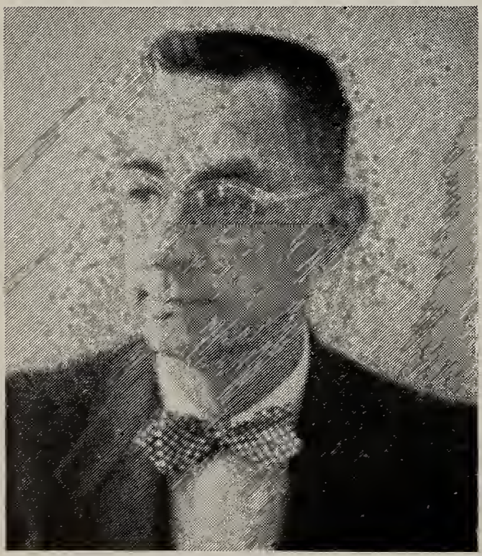
1945 - 1947

Born in Brooklyn. Premedical education at Columbia University. M.D. Medical College of Virginia 1943. Internship, Beth Israel Hospital, New York 1943-44. Assistant Resident in Surgery, Medical College of Virginia 1944-45. Diplomate, American Board of Surgery. Currently, Attending Chief of Surgery, Memorial and Wilmington General Hospitals; Assistant in Surgery, St. Francis Hospital, Wilmington. Active in American Cancer Society.

JOSEPH N. ATTIE, M.D., F.A.C.S.

1946 - 1949

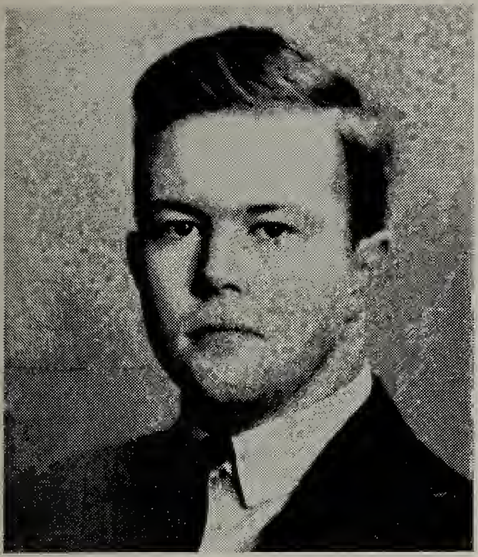
Born in New York City. Premedical education City College of New York. M.D. American University of Beirut, Lebanon 1942. Residencies: Queens General Hospital 1942-43; Memorial Hospital, N.Y. 1949-50; Mt. Sinai Hospital, N.Y. 1951. Diplomate, American Board of Surgery. U.S. Army 1944-46. At present, Assistant Clinical Professor of Surgery, State Medical School, Brooklyn; Chairman of Tumor Board, Director of Tumor Clinic and Head and Neck Surgery, Maimonides Hospital, Brooklyn; Director of Head and Neck Surgery, Long Island Jewish Hospital, Assistant Attending Surgeon, North Shore Hospital, Manhasset, N.Y.



EDWIN A. MEKANIK, M.D., F.A.C.S.

1947 - 1948
1950 -1953

Born in Philadelphia. M.D. Hahnemann Medical College 1946. Internship, Delaware Hospital 1946-47. Lieutenant Commander, U.S.N.R. 1954-56. Attending Chief of Surgery, Memorial Hospital, Wilmington.



ARTHUR I. MURPHY, JR., M.D., F.A.C.S.

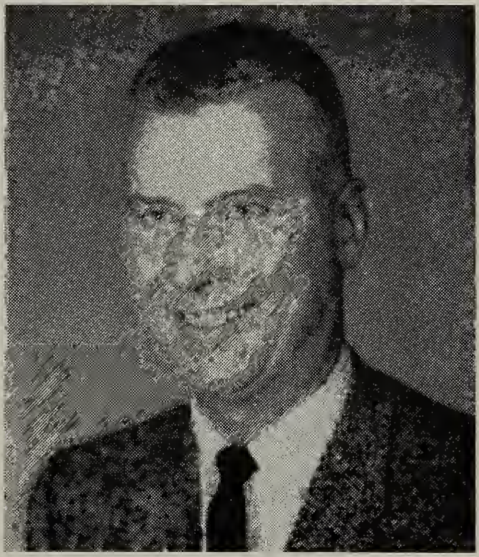
1947 - 1950

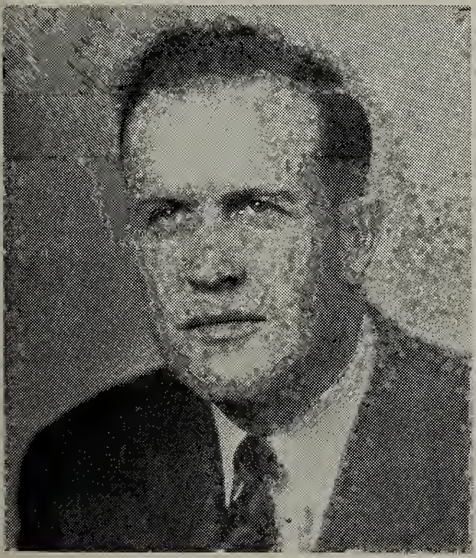
Born in Pittsburgh. Premedical work at University of Pennsylvania. M.D. Penn 1943. Internship at West Penn Hospital, Pittsburgh. Student-physician in urology, University of Pennsylvania Graduate School of Medicine 1946-47. Tumor surgery, Memorial Hospital, New York City 1950-54. Diplomate, American Board of Surgery 1951. U.S. Army in E.T. 1944-46. Currently associated with University of Pittsburgh Medical School, Presbyterian and Woman's Hospitals, the Magee Allegheny General, and Suburban Hospitals.

DAVIS A. BALTZ, M.D.

1948 - 1951

Born in Nashville, Tennessee. Premedical education at Franklin and Marshall College. M.D. Indiana 1947. Diplomate, American Board of Surgery. Currently, Chief of the Surgical Service, Chairman of the Tissue Committee, Member of Executive Committee, and Director of Surgical Residency Program, Kaiser Foundation, Vallejo, California. Served in U.S. Army Medical Corps as Chief of Surgery, 9th Station Hospital, Salzberg, Austria and as Assistant Chief of Surgery, U.S. Army Hospital, Fort Benning, Ga.

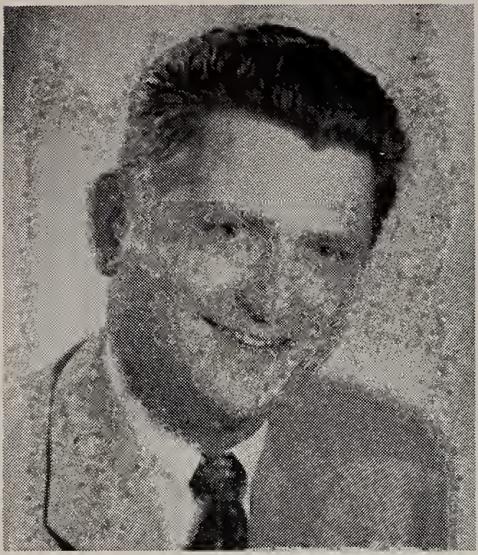




WARREN G. SMIRL, M.D.

1949 - 1950

Born in Waukesha, Wisconsin. Premedical work at Carroll College. M.D. Columbia University 1945. Internship St. Joseph's Hospital, Milwaukee, 1945-46. U.S. Air Force 1946-47. Currently member of active surgical staff, Waukesha Memorial Hospital.



ALAN IDDLES, M.D.

1950 - 1954

Born, Bryn Mawr, Pennsylvania. Premedical education at Cornell University. M.D. Cornell 1948. Internship New Britain General Hospital 1948-49. Resident in Obstetrics and Gynecology, Bryn Mawr Hospital 1949-50. Diplomate, American Board of Surgery 1956. Captain, Medical Corps, U.S. Army 1955-57. Currently Attending Surgeon, Bozeman Deaconess Hospital, Bozeman, Montana. Consultant in Surgery, Madison Valley Hospital, Ennis; Barrett Memorial Hospital, Dillon; and Sheridan Emergency Hospital, Sheridan; Mountain View Memorial Hospital, White Sulphur Springs, Montana.

L. MARIO GARCIA, M.D.

1952 - 1955

Born in Fredonia, Colombia. M.D. University of Antioquia, Medellin, Colombia 1949. Internship, San Vincent of Paul Hospital, Medellin 1949-50. Graduate course in general surgery, University of Pennsylvania Graduate School of Medicine 1951-52. Preceptorship, general surgery, Wilmington General Hospital 1955 and Salem Hospital, Salem, N.J. 1958-59. Rotating internship 1956-57 and General Practice Resident 1957-58, both at Memorial Hospital, Wilmington. Currently Assistant in Surgery at the Memorial, Wilmington General and St. Francis Hospitals.

ROY GEORGE MUNROE, M.D., C.M.

1952 - 1956

Born in Springhill, Nova Scotia, Canada. M.D. Dalhousie University, Halifax, Nova Scotia. Was in the Royal Canadian Navy in World War II. Currently in private practice in Stellarton, Nova Scotia. Certified in Surgery, Royal College of Physicians and Surgeons of Canada, 1959.

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In Brief

Salt Lessens Shock

The value of using saline solutions to treat shock after injury—particularly in cases of patients with severe burns—has been established through extensive research carried on by the National Institutes of Health. Drinking saline solutions during the 48-hour period following injury has been found to be almost as effective for the patient as transfusions of equal quantities of plasma or whole blood. (Tests were made in Lima, Peru where very little plasma is available.)

Drug Industry has a Word for it

Physicians who would prescribe drugs by generic name rather than by *trade* name "may be playing a type of medical Russian roulette," Dr. Rudolph H. Blythe, Director of Pharmaceutical Research for Smith, Kline & French Laboratories, told the Annual Pharmacy Congress. He pointed out that products labeled to contain identical compounds will not necessarily produce identical therapeutic effects. Dr. Blythe added that it is this efficiency of absorption which is the critical factor in the therapeutic utility of any product and establishes the difference.

Quote Without Comment

The index of a 1959 edition of a textbook on pediatrics contains the entry, *"Birds, for the."* From the *National Library of Medicine News.*

False Claim

Scientifically controlled studies of "immune milk"—sold at $1.10 a quart and offered as a cure to relieve rheumatoid arthritis—show that this is a misrepresented product and has absolutely no effect on the disease, says the Arthritis and Rheumatism Foundation.

Computed Health

Questionnaires that cover a multitude of medical facts about the individual, such as the medical history of his forebears, childhood diseases, occupations, amounts of sleep and exercise, eating, drinking and smoking habits, etc., have been collected by 70,000 volunteer workers of the American Cancer Society from a half-million families in 20 states. This information will be transferred to punched cards and the answers processed during the next few years. Then, whenever an individual included in the survey dies, the State Health Department will send a copy of the death certificate to the American Cancer Society headquarters, and where the data will be analyzed. It is hoped that the findings, in addition to telling us what to do to cut down our chances of getting cancer, will give important new information about the etiology of other diseases; such as cerebral hemorrhage, diabetes, and heart disease. Among the puzzles that should be enormously clarified is the relation of diet and exercise (or lack of it) to heart disease. Computers are only now beginning to enter into medicine, and it is precisely such complex problems—involving vast masses of data—for which computers are designed.

Reporting of Epilepsy is a Must

It has been ruled by Chief Deputy, Attorney General Clement C. Wood, that doctors who diagnose and treat epilepsy are obligated to report it within a week to the State Motor Vehicle Bureau. This ruling was sought by Dewey A. Nelson, M.D., clinical neurologist, Wilmington. The reports are to be kept confidential and used to enforce the law in determining driving eligibility.

Welfare for the Aged

Tribute was paid to Dr. C. J. Prickett, superintendent of the State Welfare Home and Hospital for the Chronically Ill at Smyrna, for his foresight and experience in discharging his duties. The occasion was the dedication of the new 200-bed Candee Building at the hospital, named for Charles L. Candee, D.D., Pastor Emeritus of Wilmington's Westminster Presbyterian Church. Dr. Candee was honored for his long service to elderly people in this state.

Russian Hours

In a *Curricula of the Higher Medical Schools*, put out by the Ministry of Health, USSR, it is interesting to note that: 1. The Degree of Physicians (length of study, 6 years) is divided into three classes: Therapeutics (includes Surgery), Pediatrics and Public Health. 2. In all curricula of the Medical Institute, 390 hours are allotted to propaganda, which is divided as follows: a. 160 hours — History of the Communist Party of the Soviet Union. b. 90 hours — Political Economy. c. 140 hours — Dialetic and Historical Materialism. (State examinations must be taken for these subjects.) 3. Hours, varying from 154-166 must also be allotted for physical education.

Mr. Peanut

The irresistible peanut may add to his versatility by becoming the conquerer of the disease of kings. Something in the meat of this seed appears to be capable of stemming the flow of blood in hemophilia. This accidental discovery was made by Dr. Bruce Boudreaux, a hemophiliac who is zoologist at Louisiana State University. Dr. Boudreaux has been testing this hypothesis and his work is still in the experimental stage.

Regional Conference on Aging

The Medical Societies of Delaware, Maryland, Virginia, New Jersey, West Virginia and the District of Columbia were co-sponsors of the Regional Conference held in Baltimore, March 30-31, sponsored by the American Medical Association's Committee on Aging. Dr. William O. LaMotte, Jr., Wilmington, a member of the Commission on Public Affairs, Medical Society of Delaware, was one of the speakers and Dr. Alfred R. Shands, Jr., medical director of the Alfred I. duPont Institute and past president of the Medical Society of Delaware, presided at the first day's afternoon session. Other speakers from Delaware were Dr. Harvey Stahl, president of the American Association of Retired Persons, Delaware Chapter, and Mrs. Herbert E. Dobbs of Greenville, board member of the Wilmington Senior Center.

In the News

The Delaware Blue Shield Plan had enrolled almost 61% of the state's population at the end of 1959, reports National Association of Blue Shield Plans.

MAJOR MEDICAL MEETINGS IN DELAWARE

Standing Schedule

Beebe Hospital	General Staff	2nd Friday	Monthly
Delaware Hospital	General Staff	2nd Tuesday	Feb., May, Sept., Dec.
Kent General Hospital	General Staff	3rd Tuesday	Monthly
Memorial Hospital (Wilmington)	General Staff	2nd Tuesday	Jan., March, June, Oct.
Milford Memorial Hospital	General Staff	2nd and last Tuesdays	Monthly
Nanticoke Memorial Hospital	General Staff	1st Thursday	Monthly
St. Francis Hospital	General Staff	4th Tuesday 1st Tuesday	March, May, Oct. December
Wilmington General Hospital	General Staff	4th Tuesday	Jan., April, Sept., Nov.

Kent County Medical Society	Monthly Meeting	3rd Tuesday	September - June
New Castle County Medical Society	Monthly Meeting	3rd Tuesday	September - June
Sussex County Medical Society	Monthly Meeting	2nd Thursday	September - June

Delaware Academy of General Practice	Monthly Meeting	1st Tuesday	September - June
Delaware Pathology Society	Weekly Meeting	Each Friday	

Special Schedule

Medical Society of Delaware The Royal Society of Medicine	Trans-Atlantic Clinico-Pathological Conference	Delaware Academy of Medicine	April 20, 1960
Delaware Academy of General Practice	Diseases of the Chest	Emily P. Bissell Hospital	April 23, 1960
	Open House at the Virus Laboratory of Delaware — Tallman Bldg.		
American Medical Association	Annual Meeting	Miami Beach, Fla.	June 13-17, 1960
Medical Society of Delaware	Annual Meeting	Rehoboth, Delaware	September 8, 9, 10, 1960
Delaware Academy of General Practice	Annual Meeting	Delaware Academy of Medicine	December 9, 10, 1960

Delaware Medical Journal

MAY, 1960

NUMBER 5

VOLUME 32

REPORT OF THE COMMITTEE ON AGING*

TO THE MEDICAL SOCIETY OF DELAWARE

President Shands: *The program this afternoon has been planned to give us an insight into some of the problems of the aged. We have five very eminent authorities who will speak on the subject.*

To start it off, we will have a report from Dr. Prickett from Smyrna, the head of the Welfare Home and now the head of the Governor's or the Citizens' Committee on the Aging, which is being set up by Act of Legislature. Dr. Prickett, will you tell us about Delaware on the subject of aging.

Dr. Clarence J. Prickett. Mr. President, members of the Medical Society of Delaware, and distinguished guests:

We are highly honored by the presence of the distinguished speakers who are with us to discuss the medical care of our aging population and who, I am sure, will give us greater insight on this subject and a broad view into the general subject of aging.

I first wish to congratulate Dr. Shands, our President, for having obtained such outstanding members of the medical profession to meet with us in the consideration of this very vital subject, and I appreciate the privilege of presenting the report of the Committee on Aging of our State Society. I do this with the feeling of regret that this Committee has not formulated ideal plans for the medical care of our aging people, but I am happy to report that progress is being made, that the Committee believes the medical needs of the aging are being met in a satisfactory, if not ideal, manner and that the Delaware medical profession will continue its efforts as situations demand and will continue to give the aging population the necessary care in a satisfactory manner.

The rapid increase in the number of persons beyond the age of 65 with the increase in life span was unforseen not only by the medical profession but by the industrialists, economists, and by almost everyone excepting possibly a few prophets or seers.

Dr. Frederick C. Swartz, of Lansing, Michigan, in connection with sub-committee meetings in Washington, D.C., said, "The work of the American Medical Association in the field of aging has shown that the needs of persons over 65 are complex and that providing opportunity for these citizens to meet their needs requires full recognition of the widely varied circumstances under which they live," and, "if the experience of the American Medical Association Committee on Aging is any indication, the members of this committee may even find their own conception of aging undergoing material changes as the study progesses."

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*Presented at the 170th Annual Meeting of the Medical Society of Delaware, October 15, 1959.

The goal of the American Medical Association Committee on Aging is "Optimum Health for Each Individual" and it is the hope of the Delaware committee that our study will contribute and be helpful in finding a method or methods leading to the goal of healthy, happy living and a full enjoyment of our later years.

Between 1900 and 1950, the United States saw a revolution in population. During this period, the number of those aged 45-64 in this country roughly tripled to 31,000,000, and those aged 65 and over quadrupled to 12,000,000. Present estimates are that today there are 15,000,000 Americans 65 years of age and older, and that by 1970 this figure will climb to more than 20,000,000.

Population Trends

Population trends in Delaware are comparable to those of the rest of the country, with the distinction that a smaller proportion of the population is over 65 years in Delaware than in the country generally. In this State, 7.3% are over 65; nationally, 8.8% of the population is age 65 or over. It is both interesting and significant that there are substantial differences in the age composition of metropolitan northern Delaware and in agricultural southern Delaware. In New Castle County, the 1957 figures of the United States Bureau of Census indicated that 5.1% of the population was over 65 years of age. To achieve an overall percentage of 7.3%, it follows that nearly 12% of the population of Kent and Sussex County must be 65 years of age or older. Dr. Floyd I. Hudson, Executive Secretary of the Delaware State Board of Health, explains that an enormous influx of younger working people has been seen in New Castle County during the past decade, effectively deferring a rise in the percentage of aged people comparable with that seen elsewhere.

Census figures for New Castle County indicate a leveling off of the aged population from 7.5% in New Castle County in 1950 to 5.1% in 1957, and an estimated 5:2% in 1960, 5.3% in 1965 and 5.3% in 1970. Thus, the state appears to be faced with two distinct situations with regard to the aged, in that the percentage of citizens over 65 in Kent County and in Sussex County appears to be about double that expected in New Castle County.

As a summary of the States's population picture in 1957, we had a population of approximately 426,000, composed of 151,000 individuals under 18 years of age; 162,000 from 18 to 44 years of age; 82,000 from 45 to 64 years of age; and 31,000 aged 65 and over.

Obviously, any revolution in population composition brings with it problems of housing, economics, and welfare in its many aspects. As a physicians' committee, we have had to confine our chief interest to the medical and hospital aspects of geriatric care, but we feel that to be realistic, this care must be considered against an economic and sociological background. Therefore, having presented background information on population, we should like to digress for a few moments to the economic status of the aged.

In Delaware, during the period 1955-1957, there was an annual per capita income of $2,744. In 1957 the median income of Delaware men 65 or over was $1,714 per capita. 25.4% of men over 65 had no income. Among women the median per capita income over 65 years of age was $594, while 63.2% of women over 65 had no income at all. This is, of course, without reference to indirect income in the form of homegrown produce, rent-free dwelling place, etc., and refers solely to cash income. Delaware ranks in the upper third of states in percentage of male population 65 or over in the labor force, as of 1950. 45.1% of Delaware males over 65 were employed in that year, as against a national percentage of 41.5%.

Apart from private employer pensions, about which no general information is readily available, there are two major sources of unearned income for the aged. These are federal old age assistance (Social Security) and State Department of Public Assistance grants.

In Delaware, 711 out of every thousand people 65 years of age or older were receiving one or the other or both of these forms of aid during June, 1958. 673 of these were receiving Social Security benefits, 49 State old-age assistance grants, and 11 were receiving both.

Further, to break down the Social Security picture, of the 26,947 payments to Delawareans in June 1958, 15,582 people were receiving old-age retirement, 3,970 were receiving benefits as the wife of an insured worker, 2,896 were receiving Survivor's payments, and 71 were receiving parents' benefits. Owing to some duplication in the categories, the total number of elderly people receiving the 26,947 types of payment is 22,519.

On an individual basis, the average benefit per wage earner per month was $75 in June, 1958. The amount will have increased since then, because of a 7% increase in the Social Security benefit, and the base will have been broadened because of the increase in the actual number of beneficiaries.

Sources Of Income For Aged

There are several sources of income for aged persons similar to Social Security, but administered separately. To enumerate these briefly, 1940 Delawareans are receiving retirement benefits through the Railroad Retirement program, amounting to a total monthly benefit of $182,000. 444 Delawareans received Civil Service retirement in the amount of $60,000 per month. 230 people received State and local retirement pensions in the amount of $26,000 per month. 1470 Delawareans received various payments, including Disability and Survivors' benefits through the Veterans Administration, in the amount of $111,000 per month. All these figures are for June, 1958. To summarize, it would appear that approximately 31,000 individual payments totaling approximately $1,925,000 per month were being made through federally-administered programs to Delawareans in June, 1958. There was a certain amount of overlapping, some individuals receiving payments from more than one source. How much of this actually occurs, your Committee does not know.

Delaware's program of State Old Age Assistance is considerably more variable than the Federal Social Security Program, chiefly because of the requirements for participation. To be eligible for OAA, a recipient must, first, have been a resident of the State for a period of one year and be 65 years or older. Second, he must have an income not in excess of the standard set by the State Department of Public Welfare, and third, he must have less than $300 in cash. A certain amount of personal property is allowable over and above cash resources. A department social worker estimates the eligibility for the maximum $75 payment, and takes into consideration the personal property of the prospective recipient. The average old age assistance payment in Delaware is $48.50 per month. This compares with the national average state payment of $64.90.

Delaware is notable, with Montana, as one of two states not providing vendor payments for medical care. Nationally, these payments average $5.80 per month, but reach a high of $23.90 in Oregon. The Federal Government stands ready to contribute $3.00 of the first $6.00 spent each month for this service. An exception to the lack of vendor payments in Delaware is a $5.94 monthly allowance for medical care given to the blind.

Forty-nine Delawareans of every 1,000 over 65 years of age receive State assistance. This compares with the national average of 162 of every 1,000. Approximately half of the State's caseload is in rural areas, chiefly in Kent and Sussex Counties. Changes in Social Security regulations which affect the financial status of the aged naturally effect the caseload of the State Welfare Department.

From economic resources, your Committee turned its attention to physical resources available for medical care of the aged. These have been separated, broadly, into three categories: Privately incorporated hospitals, home care programs, and nursing homes.

Physical Resources Available

Delaware has nine privately incorporated general hospitals available for the care of the aged. Of these, five are located in and around Wilmington, and offer approximately 1,250 beds. General hospitals are also located in Dover, Milford, Seaford, and Lewes, averaging slightly under 100 beds each. Expansion programs are now underway in at least the Beebe Hospital in Lewes, the Kent General Hospital in Dover, and the St. Francis Hospital in Wilmington.

The Committee's discussions with hospital administrators have shown unanimity on two points: first, that some means must be found to increase the State's participation in meeting the cost of care for patients who are unable to meet it for themselves; and second, that aged patients do not create a medical problem different from that of the population as a whole, except, that there is naturally a larger percentage of admissions among the older population than among the general population. It would also appear that there has not been any substantial increase in the percentage of patients admitted over age 65 in the past several years.

To the older patient himself, however, illness presents a more serious problem than to the younger patient. As a result of a longer average length of stay, the aged patient has a larger hospital bill than does the younger one, and is less able to pay for his hospitalization. Mr. Bertram Zimmerman has demonstrated this in an analysis of a ten percent random sample of discharges from the Delaware Hospital during the year 1957. Mr. Zimmerman's findings are shown in the summary below:

Average Charges by Age Group by Service — All Patients

Clinical Service	*Age 60-64*	*Age 65-69*	*Age 70-74*	*Age 75+*	*All Patients*
Medicine	$302	$346	$374	$400	$347
Surgery	491	430	399	521	330
Gynecology	402	262	340	382	184
Genito-Urology	619	547	488	552	300
Orthopedics	384	74	521	402	344
Neuro-Surgery			887	191	571
Dentistry		96			99
Ophthalmology	161	319	280	132	208
Other	266				144

Average Length of Stay by Age by Clinical Service

Clinical Service	*Age 60-64*	*Age 65-69*	*Age 70-74*	*Age 75+*	*All Patients*
Medicine	10.88	14.24	15.27	14.79	12.22
Surgery	14.81	14.33	13.00	19.63	10.71
Gynecology	16.67	10.50	10.00	15.00	5.52
Genito-Urology	19.00	15.33	16.50	27.00	10.05
Orthopedics	12.33	3.00	15.00	11.67	12.83
Neuro-Surgery			36.50	7.00	20.19
Dentistry		3.00			2.39
Ophthalmology	8.50	12.25	13.50	6.50	9.18
Other	8.00				4.87

In his study, Mr. Zimmerman makes the reasons for longer length of stay and higher average costs per case among the aged quite clear. On the whole, population of the hospital, the diagnosis of patients with the higest average length of stay were:

Vascular lesions of the central nervous system
Accidents
Other diseases of the central nervous system
Malignant neoplasms
Nephritis and Nephrosis
Hypertensive and arteriosclerotic heart disease

The diagnoses resulting in the highest average cost per patient were:

Malignant neoplasms
Vascular lesions of the central nervous system
Other disease of the central nervous system
Accidents
Disease of the stomach and duodenum
Senility and ill-defined diseases

The leading causes of hospitalization among the aged were:

Hypertensive and arteriosclerotic heart disease
Malignant neoplasms
Accident
Vascular lesions of the central nervous system
Diseases of the eyes and ears
Respiratory infections

While it is difficult to draw absolute lines of cause and effect, it is obvious that four of the most frequent diagnoses of aged patients also appear on the list of those diagnoses requiring the highest average length of stay, and three of those also are among the diagnoses resulting in the highest average cost to the patient.

Confronted with these problems, how do aged patients pay their hospital bills?

Mr. Zimmerman found that of 128 patients over 65 years of age in his sample, 35 paid for care themselves; 46 were covered by Blue Cross; 13 were covered by other insurance; 22 were indigent; and 12 made partial or no payment. 46.1% of aged patients were covered by hospitalization insurance, as compared to 75.9% of the younger patients.

Before proceeding, the Committee wishes to express its appreciation to Mr. Zimmerman for making available his studies, which have consumed literally hundreds of hours of work, and which otherwise could not have been available to the Society.

State Institutions

State-owned institutions providing medical care for the aged among others, include: Delaware State Hospital with 1400 beds; Hospital for the Mentally Retarded with 475 beds; Governor Bacon Health Center, with 140 beds for geriatric patients; Emily P. Bissell Hospital with 223 beds for tubercular cases; and the State Welfare Home and Hospital for the Chronically Ill at Smyrna with a normal capacity of 346 beds, will soon add 196 beds through an appropriation of $1,100,000 from the State and a grant of $747,165 from the Department of Health, Education, and Welfare, under provision of the Hill-Burton Act. The addition of this unit will provide not only for the permanently ill but for the chronically ill, and will function as a rehabilitation institution in that it gives the opportunity for participation in community life for older people, and aims to rehabilitate as many people as possible, at least sufficiently to realize this goal.

State Agencies

State agencies standing ready for service include the State Department of Public Welfare, mentioned above, the Rehabilitation Division of the State Board of Education and the State Board of Health. The Vocational Rehabilitation Division has rehabilitated over 500 persons to gainful employment. There are an increasingly large number of older people in this group. In 1949, only 15% were over 45, while in 1959, 34 were over 45, and 2% were over 65.

While the State and County Boards of Health have no specific programming for the aged, each unit provides primary care in the form of direct nursing service, counseling, and reference to existing facilities. The licensing of nursing homes is also a service provided by the State Board of Health which directly benefits the aged person.

Granted that hospital care is more burdensome for the aged than for others, for a variety of reasons, the question must arise as to what facilities should be made available other than the hospital for care of the sick. Your Committee advisedly refuses to use the term aged sick, because it believes that qualitatively, no difference exists between the medical problems of the aged and those of any other population group. Efforts to provide extra-hospital care might best originate from the hospital itself. At any rate, some of our hospitals are reaching out for ways to alleviate financial stress upon the patient and upon the hospital itself without sacrificing the quality of care needed by the patient. These efforts take two forms: The Home Care Program and the Social Service Department.

The Social Service Department is a formalized attempt to put the patient in touch with those agencies public and private, which can best serve his need. It is a thoroughly commendable project, but does rely upon existing facilities to assist it in its operation.

The Home Care Program, of which one is now in operation in the State, is a more ambitious project, and we should like to comment upon it.

Essentially, home care is a self-explanatory phrase, signifying that the patient is cared for at home instead of any hospital or long-term care institution. Every practicing physician who makes house calls on patients too ill or infirm to visit his office has a "home care program" of his own. A well organized program operating from the hospital makes it simpler for the physician to obtain the various professional services such as those supplied by the Visiting Nurse Association, occupational therapists, physical therapists, laboratory, etc., and supplies such as drugs, bandages, and equipment, as well as transportation to the hospital for consultations, x-rays, or other reasons.

The aged, because of their higher incidence of chronic disease, their usually poorer economic situation, and their generally poor adaptation to strange environments are eminently suited for home care. A greater use of home care programs by all physicians might, perhaps, prevent some and shorten many hospitalizations of the aged patient.

Certain criteria must, of course, be met before any patient can be considered a suitable candidate for home care. Most important, obviously, is the necessity for a responsible family that wishes to bear the burden of the patient's care and wants him at home. Under these conditions, the patient does better at home, eats better, sleeps better, is happier and therefore less pre-occupied with his illness. We must stress here that it is the availability of a relative, willing and able to care for the patient that counts, and not the previous nursing experience of the relative.

Equally obvious, the medical condition must be such that home care will provide satisfactory service to the patient. This is a determination for which the attending physician will always be responsible.

Because of the nature of the diseases amenable to home care, chronicity will usually be an aspect of the care. This is illustrated by the elderly patients cared for in the third year of operation of the local pilot home care program. During this year, 9 of the 30 patients over 60 years of age died; 10 were discharged for follow-up through the out-patient department; two were readmitted to the hospital; and 9 remained on home care.

The Nursing Home

The role of the nursing home lies somewhere between that of the home care program and the general hospital. It is difficult to define this role exactly because of the variance between homes for the aged who are ambulatory and homes for the aged who are essentially bedridden. Because of the personal nature of nursing home care, it is doubtful that any cut and dried definition will ever be available.

There are in Delaware approximately 40 licensed nursing homes, of which 18 are in the City of Wilmington. A few, approximately 8, scattered throughout the State offer care designed especially for the aged patient. Again, it is difficult to define exactly the distinction between care for the aged patient and care for any other type patient. About one-half of the nursing homes in this State are privately owned.

While the nursing home seems an ideal way of caring for many patients, there are significant problems involved. The majority of the adequate homes have few vacancies. The usual patient stays until death claims him. While the average stay in a nursing home appears to be about 3 years, it is probable the mean is considerably shorter. A comparison with the figures at the Delaware State Hospital for presumably similar patients would show a mean length of stay of 6 months to one year among those patients who are not discharged either into the community or into an acute general hospital.

The chief problems of nursing homes seem to be those of personnel. To maintain a license, a home must have at least minimally trained personnel on duty at all times. There is a shortage of people trained in this type of work. Further, the minimum fee in private nursing homes, generally, appears to be about $225 per month or $50 a week. This eliminates this type of home as a facility for care of the older person whose income is solely from Social Security or the State Welfare Department. Thus, there exists a certain proportion of the aged ill who would benefit by nursing homes but who are unable to afford them. Your Committee has been unable to secure figures on this particular point.

Special Division Created

In the current session of the Delaware General Assembly there was created with the support of the Medical Society of Delaware, a Division of the Aging within the Board of Trustees of the State Welfare Home. It will be the duty of this division to foster the formation of a Citizens' Council on Aging. The Council will consist of a central committee and of local committees composed of persons who are outstanding in each phase of aging in every community. On the central committee, as well as on each local committee, a physician will be included in the membership. Expenses for a thorough study of all phases of aging have been provided by a grant of $12,200 from the Department of Health, Education, and Welfare, and the findings of the various committees of the Council will be communicated to the White House Conference on Aging in January 1961, which conference has the theme, "Aging With A Future, Every Citizen's Concern."

Investigations

Investigation, as thorough as possible, will be made throughout the State into such subject as: (1) Determination of an adequate minimum income, (2) The opportunity of our older citizens to become gainfully employed, (3) The availability of home-living for older persons, (4) The availability of home-like institutional care. (5) The possibility of the mental and physical rehabilitation of older people and their participation in community affairs, (6) The recommendation of continued research into all phases of aging.

Your Committee wishes to point out that however complex the medical needs of the aged may be, they are, after all simply one of the many needs of our older people, and should be kept in this perspective. The goal of the American Medical Association's Committee on Aging is "Optimum health for each individual," which recognizes, we think, the fundamental truth that the aged must be considered an integral part of our Society and that regardless of age, none are happy unless they have the feeling of belonging — unless they are given an equal opportunity to work or to be employed in some manner—unless they have a retirement income sufficient for health and housing and participation in community life — or unless they have pleasant and adequate home surroundings. Dr. L. Kuplan has put this well in the journal, "Geriatrics": "The basic responsibility for meeting the problems of aging lies with the citizens of each community."

Dedication To A Cause

While the population is changing daily in Delaware, the nation, and the world, your Comittee does not feel that it is drawing a flowery picture when we state that we fully believe that the medical services for the aged available in Delaware will not only continue to be adequate but will increase to the extent that we will meet satisfactorily future medical needs of our aging population. Those aged persons who have had sufficient health to build an estate of adequate size to provide for a full life following retirement, those individuals who receive sufficient pension from industry to provide the necessities of life, and the aging individuals who have relatives, especially legally responsible relatives who are well able to provide for all needs of the elderly person must and will continue to meet these needs. For those who are chronically ill, without a home, without funds or any source of income, who have small pensions or inadequate Social Security benefits, must continue to be taken care of through appropriations made by the State and Counties.

Your Committee realizes that we have little more than an interim report — a beginning — to present today. The medical problems of our community at large, including those of the aged, are complex and will require the continuing study and support not only of the committees of the State Medical Society but of Physicians generaly and citizens generally. We feel that we have made a start and we intend to continue our work. There are many things that we do not yet know and there is information that we have not included in this report for reasons not only of time but because of the doubtfulness of their place in the general picture.

In closing, however, I would like to present certain fundamental truths that have been established and that must be borne in mind by all of us as we treat the aged ill.

For those who are chronically and permanently ill, home-care, or home-like institutional care must be arranged.

Proper mental adjustment in older people is often obtained or at least improved by tender loving care as suggested by Dr. J. T. Ferguson.

Older people should expect and obtain the privilege of participation in the recreational, educational, religious and civic life of the community.

Many have gained happiness through proper counseling during their earlier years. And finally, elder citizens should have the right to free choice, self-help, and planning of their own futures.

May I repeat an old saying: "Since we are adding years to life, we should also add life to those years."

I wish to thank Dr. Samuel G. Elbert Jr., for the report of his visit as a delegate to a meeting of the American Medical Association, Committee on Aging; Dr. Bernadine Z. Paulshock, for her report as a delegate to the Joint Council of the American Medical Association, American Hospital Association, American Dental Association and American Nursing Home Association; and to Dr. John J. Lazzeri, for his report of the Leadership Institute on the White House Conference on Aging.

Respectfully submitted,

C. J. Prickett, M. D., Chairman
S. G. Elbert, Jr., M. D., Vice-Chairman
J. A. Elliot, Jr., M. D.
Felix Mick, M. D.
B. Z. Paulshock, M. D.
H. W. Smith, M. D.

PANEL DISCUSSION – GROWING OLDER THE MEDICAL, MENTAL AND SOCIAL PROBLEMS OF THE AGED*

Edward L. Bortz, M.D.

Ewald W. Busse, M.D.

Dean W. Roberts, M.D.

Alfred R. Shands, Jr., M.D.**

President Shands: *We will start with our panel.. Dr. Bortz, past President of the American Medical Association and a member of the A.M.A. Committee on Aging will lead.. Dr. Bortz is well known in the United States for his interest, writings, teachings and lecturing on the subject of the aged.. Dr. Bortz.*

Dr. Edward L. Bortz: Thank you very much, Dr. Shands.

Distinguished guests, ladies and gentlemen:

The current year 1959 is a very appropriate time for consideration as to where we stand with man in his changing environment and changing status as an individual, and as a member of society. Because this is the centennial year for the publication of Charles Darwin's, "*Origin of the Species*," a number of articles have appeared in scientific literature, and one book on the life of Darwin.

We are living in a very turbulent era and there are great and significant alterations taking place in man's social environment. In the latter part of the last century, the industrial revolution culminated in this amazing present era (from the standpoint of material things) in which we are getting better things for better living through chemistry. There is going on a very deep and profound social revolution. The world is growing smaller. There is no doubt the new issues that society is facing today are very complex and the nations of the world are having a great deal of difficulty. There is a good bit of turmoil.

With the amazing improvements in transportation and communications, we have communities existing only fifty miles apart which are two thousand years apart in civilization and culture. I refer to Africa. In the large centers of population such as Johannesburg, Capetown, Durbin, and Pretoria we find the most advanced culture while fifty miles away cultures and civilizations exist exactly as they did in the time of Christ, two thousand years ago. What is happening as all of these different cultures and nations come together with the more favored nations and these people in the less favored nations see what is going on? There is a tremendous turbulence existing.

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*Presented at the 170th Annual Meeting of the Medical Society of Delaware, October 15, 1959.

**Moderator, President of Medical Society of Delaware, 1959.

I was interested a month or so ago to read in the Saturday Evening Post, a very appropriate comment by Christian Herter, our distinguished Secretary of State. He pointed out, "We are living in a time of revolutionary change, quite apart from Communism. In the next year five entirely new nations will come into existence. We cannot meet the challenge of Communism unless we are able to meet the challenge of change, and to do that we have to be willing and able to change ourselves."

I have taken for my few remarks this afternoon the title, "The Changing Older Man." Today, through the amazing advances of scientific precision, techniques and instruments, a world has been brought into being that you or I a couple of decades ago would not have thought possible. We are reaching for the moon and beyond the moon and we are searching the recesses of outer space. At the same time, the techniques and refinements that science is placing at the command of our expert investigators for interpreting and studying the inner spaces of inner man, are of more significance.

Dr. Prickett has pointed out that more people are living today than ever before, and this is a quantitative factor of human existence. We are living longer, and I think we could say that if we were to take advantage of the knowledge that we already have today, I am convinced that 50 per cent of the illness that is placing people in the hospital could be entirely eliminated. We are living as second class citizens in a world where the potentials for a much richer, keener, sharper enjoyable living are within our grasp if we want to take advantage of our present knowledge.

That is not gainsaying that there is a tremendous lot of darkness around. But one after another, the diseases are being brought under control. And you know since the turn of the century, smallpox is gone, typhoid fever is a rarity, pneumonia is becoming less frequent. They tell me that tuberculosis is on the way out. I talked to a specialist in tuberculosis not so long ago and he said, "If we would take advantage of the knowledge we have today we

I don't like the term "geriatrics" and I am very allergic to the term "aged"—this term that focuses on those at the pre-cemetery level. It seems to me there has been entirely to much talk and commiseration with these older individuals; there is only a very proportionately small number of these people. These who have possibly died ten years ago and will be buried maybe ten years hence. This is a problem.

We should not let individuals with their problems — and you and I might be candidates for this group a little bit later— color our broader evaluation of the exciting challenge before us.

There are four major diseases and disorders of the older man and woman. These are: First, the diseases and deteriorations of the blood vessels. They killed over two million people last year. Second, cancer. This killed 267,000 or 268,000 last year. Third, arthritis and rehumatism which maimed some twelve and one-half million last year. And the fourth major curse today for the older individual is nervous and mental disorders.

If I had time, I could examine with you the very exciting researches that are going on with the end in view of conquering these conditions.

What is going to happen when you gain control of vascular deterioration; (we can already do this with animals) when you reach a much better control of cancer; when we hold down the ravages of arthritis and rheumatism and bring about a healthier status of the nervous system, the central nervous sytem? When we rid ourselves of other vascular deteriorations, rheumatoids and cancers that afflict the nervous system, what is going to happen? We are going to have a more vibrant, a more virile, a more healthy nervous system. In the last

Invited speakers for the Symposium on the Aging confer before panel discussion. Left to right: Dr. Louis M. Orr, President, American Medical Association; Dr. Edward L. Bortz, Past President, American Medical Association; Dr. Theodore G. Klumpp, President, Winthrop Laboratories; Member, AMA Committee on Aging; Dr. Ewald W. Busse, Professor of Psychiatry, Duke University; Dr. Dean W. Roberts, Executive Director, National Society for Crippled Children and Adults, Inc.

analysis it does not matter how strong your blood vessels are or your heart, your kidneys, your muscles, your bones or your joints, because in the last analysis, the mind is the measure of the man.

This is the reason it is so tremendously important to listen to the pioneers in the field of mental health and the psychological aberrations, such as our good friend Dr. Busse. He is concerned with the content of the mind of individuals as they grow older.

Not only is there a linear content so far as the quantity of time, but people are going to stay young longer. I am convinced that within two or three decades we will have four or five times the number of centenarians that we have today. There are some 20,000 centenarians in the United States. But this is going to increase, and more and more people are going to be living into the seventies, eighties and nineties as these conditions are brought under control. We can now practically double the life span of experimental animals. We can breed healthier cattle, dogs and sheep. We can double the size of grapes, tomatoes and apples and similar things. Through science we have brought about an alteration. Man himself, too, is changing. The older man is changing, and all along the life span, individuals are changing. There is the promise of a healthier life. And if we have a healthier life; if men and women are going to be living into their prime, into the seventies, eighties and nineties — what sort of a society are you and I as doctors going to be building? After all, the biologists, the philosophers, the family doctors (who are really basically the philosophers of family practice today) are the architects of tomorrow's world. My point is this, that in going along, the content of medical education and medical practice is changing, because today three out of four of the patients going to hospitals are older people.

We have three groups of older people, the aged, the decrepit and the infirm — as I said — those at the pre-cemetery level. All these people need is institutional care— tender, loving care. And we should not build palaces for them and spend a tremendous lot of money for these people. What they want is just a kindly atmosphere, that is all.

The second large group are those who need medical care. The major group of individuals, of men and women — citizens reaching the sixties and seventies today — are men and women in sound health, not only in sound physical health, but capable of a greater performance today. They are younger longer. If individuals are going to be younger longer, don't you see the alteration that it is going to make — the impact on soceity in every community?

In those areas where you take advantage of the majestic benefits from medical science through public health, sanitation, improved nutrition, a better and a keener appreciation of exercise, and the necessity for keeping the waistline spare, (and it ought to be what it was at the age of 20 or 25) and keeping the nervous system resilient and the vascular system in good tone, there is the possibility of living a round century of happy, wholesome, buoyant, vibrant existence.

With automation coming on and less need for the labor-demanding work that our laboring men and women have had to carry on in the past half century, there is not the need for the heavy muscular work in the labor market today as previously. From a forty-hour week we are going to a thirty-six-hour week and a thirty-hour week and then possibly a twenty-four-hour week. Men and women will be working possibly two or three days a week. You will have the threat of leisure. Man is changing and the atmosphere and the environment are changing. Our external environment is changing but of greater importance, the internal environment of modern man is changing, because we now have improved techniques — the radio-active tracers as research tools. We are able to trace the nutrients in the body, hormones, medicines and chemicals that we put in the body—with these little tracer elements, each of them acting like tiny x-ray machines. You can swallow a morsel of food and follow that right down to aceto-acetic acid in the Krebs cycle and beyond that into the synthesis of new products in the human body. This whole amazing new world, studying the inner spaces of inner man, is going to bring about a tremendous lot of valuable information that will be of great value by enriching the lives and the quality of existence. We are concerned with not how long you live but how richly you can live.

The human body is a thing of beauty; I hold it in reverence and awe; but what we do to it living as second class citizens, overloading and with very little exercise! We take tons of poisons to put us asleep when all we need is a good, healthy physcial work-out and eating less. So many of these simple things that the family doctors in the past knew, we have forgotten in the ultra-specialization in the chemistry of intermediary metabolism, the steroids, and so forth. A new day is coming in the practice of medicine, and to this the A.M.A. is sensitive. It has its Committee on Aging, not just duscussing the aged but more interested in "growing with the years." I think this is the challenge of modern society today, to grow and take advantage of these added years that science is giving to us. I think we are living in a most exciting time — the most exciting time that man has ever known.

It seems to me that as a member of a learned profession, the greatest of them all, we can serve our fellow man and translate our best abilities for service. What greater calling, what more wonderful calling, could we have. Yet we ourselves are changing, we are staying young longer, we can serve our patients longer. We can serve as examples in the ways that we would like to have our patients live with reference to the control of body weight, the control of exhaustion, fatigue and more than ever to have a high and dedicated motivation.

In the last analysis these are the basic needs of modern man as he comes into the most important period of his life, the mature years when he has had knowledge accruing, has been gaining more information, getting more experience, and let's hope, please God, more wisdom. There should be a keener appreciation of those intangible values that give life meaning and signigcance; the longer you live if you strive for the higher ground.

We cannot go along promoting a negative philosophy, that we want more doctors, more hospitals, more medical schools, more nurses, that we want more insurance for more sick people. Let's become a health oriented nation instead of a sickness oriented nation. Let's accentuate the positive.

As we grow older, the two basic needs are, first to maintain a positive energy balance. This is to take advantage of the information we know about, diet and nutrition, control of body weight, the importance of good posture, the importance of adequate elimination, the importance of rest for this amazing body, this mechanism, this cathedral in which you and I live our entire lifetime. Let us have a new respect for this and live on the positive side.

If you have enough exercise, you keep your muscles in good shape and you keep your bones in good shape, you can delay the onset of osteoporasis; but when you retire out of life and you become inactive, life retires out of you. If you have a body you use it or you lose it. You have a mind, and you use it or you lose it. To live meaningfully, the higher the mountain the more glorious the view. My positive philosophy which I have learned from these leaders, Dr. Orr, Dr. Klumpp and Dr. Busse — is the philosophy of accentuating the positive and limiting the deterioration so that as you live you will come to a higher and finer way of life.

In order to do that, the second of the major needs of older people is a high and specific motivation. This unfolds in such a beautiful sequence, a beautiful rhythm — the longer you live you gain this knowledge. You say, "I'm getting a little forgetful. I can't remember as I did when I was five or ten years of age." But when you were five or ten, you had very little to remember. Keep that in mind. I have been interested in this because I forget a little bit, too, and I find out that if I hang on and try to remember things, they come to me. You know if you have a library and have only a dozen books in it, it is not difficult to find the one you want; but if you have a large library — that is the equivalent symbolically of a rich mind that has grown with the years — you might have a little trouble finding the fact. But don't worry about it.

It seems to me that we are living in a most wonderful era now, in these changing times, in the most glorious nation in the world, as members of this great and noble servicable profession whereby we may help our fellow man to higher ground.

Grow old along with me, the best is yet to be, the last of life for which the first was planned. Our times are in His hands who sayeth, a whole I planned, youth knows but half. See all, trust God, nor be afraid.

Thank you very much.

President Shands: Our next speaker is one who is extremely well known in the mental field of the aging problem. He spoke on a panel at North Chapel Hill last spring. We have him here today, Dr. Busse, Chairman, Department of Psychiatry, of Duke University School of Medicine, and a member of the A.M.A. Committee on Aging who will now talk to us on "Common Emotional Problems of the Aged."

Dr. Ewald W. Busse: When we talk about these problems of aging and we realize how intense they are and we realize from Dr. Bortz' presentation the magnitude and the effect upon our society, we certainly do expect a great deal from research and developments in the future. But sometimes I think we can be too high in our expectations, we can want too much.

Sometimes I think the research that I am acquainted with is a little frightening when I look at some of the things we have been doing, some of the things we know nothing about.

I want to make sure you understand, that as I talk today, I am not only drawing from my own research but I am talking about other research that my colleagues have been pursuing. I simply do not have the time or the skill or the energy to do all of these things that we do at Duke University. Approximately 27 research projects are going on regarding the process of aging, the changes with aging and the care of the aging. I do have an opportunity to pick the brains of other investigators. I will utilize in the remarks I make today, two projects that I have been associated with and one that belongs to this other group.

I thought it would be wise for me to confine my little contribution to what I think are the two serious emotional changes we see in older people of the kind that come into your office and my office and into the clinics.

What are these two problems? One, for lack of a better word, we call hypochondriasis, the chronic complainer, the person who has excessive concern with his bodily function.

The other one is depressive periods. I am not talking about the serious depressions that require hospitalization. I am talking about the little mood swings, the downward drifts, the unhappiness periods which you see in many of your patients, and in particular in older patients.

To give you an idea where I got some of these data — a number of years ago we set out to try to find an approach to handling the chronic complainer in the medical and surgical clinics. We realized that there was a large number of them and we discovered that they are consuming an amazing amount of time. We devised a plan and started out after them. We asked everybody in the clinic if they had any chronic complainers. At that time they were being referred to as the "old crocks." If they had any, and they wanted to send them to us, well, fine. You can imagine what happened. We quickly got half of the clinic. We called this "H" Clinic.

We discovered at that point that we had an amazing number of elderly people who were considered hypochondrical. In those particular statistics we found that the women exceeded the men in the hypochondrical group. They were a large segment of them, over the age of sixty.

We are somewhat aware of the fact that aging has something to do with this.

The other study that I am associated with is a longitudinal study of normal, well-adjusted elderly people who are functioning and living in the community. These people are free of any serious medical disease—in fact, they are amazingly healthy people. As we follow them longitudinally, it is obvious they are going to get sick as when we take them into the study they all must be over the age of sixty. We generally get them through the practitioners in the area who are aware of families in which there is a particularly well-functioning elderly person. Our average age in this particular research section runs between 72 and 74 years of age.

This is not, as some of you who may be sticky about research are aware, a representative sample. It can't be, because it is a highly select sample in that they are pretty healthy, well hung-together people. They are doing a good job, are happy getting along in the community. But of course this gives us a group to look at and compare with other people who may show up in the clinic, the hospital, and so forth. We have also the other extreme group.

What have we found out about these two groups? Let's first talk about hypochondriasis. I would assume that all of you have such patients around who come in and have all sorts of aches and complaints. They literally sound like an organ recital — they have so many things to tell you about. These people can be very time-consuming; they can be quite annoying to any physician, and they can certainly be upsetting to the family. If we are going to understand these people, I think we will have to admit first that this is not a specific disease entity; it is a syndrome. It can show up in lots of things and it is not confined to one group at all. You also see it in younger people, middle-aged people, as well as in elderly people. Occasionally you see it in children. What causes it is certainly different, but I am going to confine my remarks to old people, or elderly people, we may say that they are up in the seventies, eighties, and so forth, in this particular age group.

What starts this condition going? There are three processes which, generally speaking, underlie the development of an overconcern with the body, a development of symptoms for a lesion that is either nonexistent or minimum — that is an exaggeration. What are these three patterns that develop? One, is a withdrawal of energy, psychic energy, from the customary things which the person vests with that energy and then turns back on himself. This may sound like psychiatric lingo. Let's get down to a more explicit explanation. How many of you have patients, and I am sure you all have had, who have been hospitalized and for the first time as they are lying in bed with their arm underneath their ear, start listening to the pulsation and hear it throb, and then begin to wonder, "Oh, this is louder than it should be." Or, if it is the first time they have ever noticed it, they think, "Maybe I have heart trouble." The next time the intern or resident or you walk in they ask you about it. Or, what is even more interesting to me, when you go in, some patients who have been lying very quietly notice that when their heart beats the bed seems to shake a little bit. What they are really doing is a ballistocardiogram on thmselves, so to speak. How upsetting this is for a few individuals when they become aware of this and what is happening. It is clear that what they have done is take the energy which they usually put into what is going on around them, into the daily activities involving their family, their church and their work — and they put it all on themselves. When you get this imbalance of a distribution of psychic energy, it is clear that these patients are going to see things within their own body and their own behavior or their own functioning that they have not noticed before. They watch their bowel movements. They start watching their nutritional patterns. They do all sorts of things that they did not do before.

This is one thing that, as we hopefully get into some aspects of treatment, you have to keep in mind — that elderly people, those who are retired and particularly those who have not planned to fill their time adequately, as Dr. Bortz repeatedly has stressed, need to maintain activity, physical, mental and so forth. Those individuals who have not planned adequately to do this start turning their energy inward and get these peculiar patterns or symptoms.

There are two other devices which are not quite as common in elderly people. The first one is really a way of reducing guilt. How can I say this? I can try anyway. There are some people (you see this more in younger people) who feel that they have done something wrong, and, as you know in our society when you do something wrong you usually expect to get punished eventually. There are some hypochondrical people, not very frequently seen in older people, who do this. They feel guilt-ridden and they punish themselves by saying, "I am sick, I have a pain, I have been injured in some way," to reduce this particular problem. I don't think you have to worry too much about this, but I have to point out to you that it is there, in case any of you read the literature. It certainly does occur.

There is another one which we do see in older people. This is a way they have of making themselves concerned with something which is really of less import to them than what they are really worried about. Here is a man who has been on the church board for a number of years — let's say he has served for twenty-five years, and finally the church board comes to him and says, "Mr. Jones, you have served us beautifully. We are going to have a dinner for you. We want to honor you and we want your wife to come." Then they sort of hint to him that maybe it is time for him to retire. They give him the honor, whatever it might be, or a watch. Then he starts worrying, "How much have I slipped? How come they don't like me or they don't want me around any more?" This was really a cover. What he does is worry about this a little while and then he says, "I can't afford to worry about this. There must be something else really that I had better worry about." He starts worrying about his heart. What he does then is shift from one area of worry to another.

These things get very tricky because it can so easily turn to a secondary pattern. It becomes an excuse worded, "No wonder I couldn't manage that job on the church board any longer. I am really sick. I have heart trouble, and if that doctor would take good care of me and make sure that I get well again, I could get my job back again." They manage to get sick in order to have an excuse, and they also start thinking, "The doctor is the person who is going to have to get me out of this," not thinking that there is some other way to get out of it. They see it then as a health problem of "how to get out of it."

How about the doctors themselves? Why don't doctors get along as well as they should with the hypochondriacal or elderly patient? In order to achieve a better understanding of the types and origins of these particular difficulties, my colleagues and I have observed medical students and house staff in their work with such patients. It has become evident that the student or physician is uncomfortable and frequently fails to give complete instructions to the patients regarding the treatment regime they are expected to follow.

It is quite evident that many doctors carry with them the cultural feeling that if a person uses illness as an excuse for work, this is not fair this is not right. Nearly every normal individual as a little child goes through the time when he doesn't want to go to school and he uses a bellyache or some other complaint as a way to stay out of school. It is pretty consciously done in most instances. It is only when your conscience gets a little bigger that you decide, "Well, you can't avoid it this way, you cannot use illnesses." And many adults do. They don't want to go — their wives wants to drag them to a tea — and the man will say he has a headache or he wants to go to bed early or has had a hard day at the office. He knows very well this is not quite true and he is a little disgusted with himself for it. Our society says you don't use such kind of excuses — you are supposed to be strong enough, good enough, and so forth, to go through with it. Doctors have this built-in resentment as all people do, by the way, and I am just trying to remind you that we are not a lot different in some respects from other people.

There is also another problem which I think we are changing to a degree. It is certainly in my medical training (and in most people it was very apparent) that we approach diagnostic problems as a test of our medical skill. When I was a sophomore in medical school, late in the sophomore year was really the first contact I had with a patient. It is earlier in the curriculum now, and some of you may have had a different experience. As students we would go up, be assigned a patient, have to take the medical history, have to do the physical, have to make our run through what we would recommend for further diagnostic procedures, then the supervisor, the instructor would come around and say, "What did you find out?" You would re-cite your medical history, give your physical findings and give a diagnosis. That really is a game, trying to see how good you are.

If you have had the opportunity, personally or as an instructor, to see what happens if you slip a cardiac neurosis into a medical school class you will find that most medical students are unprepared, do not expect a cardiac neurosis; they expect someone with real heart disease. These patients give a very nice history sounding like precordial pain, and the medical student swallows it hook, line and sinker. Then he listens to the chest and he decides, "Well, by gosh, he must hear something, the rhythm must be peculiar," and he comes around and has made a little notation about this. Then when I or some other psychiatrist examines the patient and say, "Doctor, there is no murmur there — there is nothing wrong with this man's cardiac rhythm," he gets very upset. Then we go ahead and say, "In addition to this, it is all a neurosis. There is nothing physical at all."

The medical student cannot get angry with himself. What he does is get angry at the patient who led him down the wrong path, "This so-and-so took me down the wrong path and ruined my opportunity to impress the instructor." It is no wonder that we start getting these feelings about treating these patients.

What else can go wrong? We can talk about older people. We have watched — we have a team going on called our health maintenance team. The health maintenance team is really doing nothing else but trying to find ways of teaching our house staff, the residents on medicines, surgery, and psychiatry, particularly, how to handle old people and what their problems are. We work predominantly in the medical clinic, that is true. We have some junior students and senior students assigned, (predominantly senior students), who rotate through this clinic. And by watching them, we discover there are some medical people who have a very difficult time talking with older people. Then we have to find out why. Why do some medical students get along well with old people? Why do others fail?

A very common problem stems from those who have had peculiar relationships with their parents. The medical student who does not feel that he can talk adequately with his parents transfers this feeling to other old people and has trouble talking with them, particularly if it has to do with telling them how to behave and how they should live and so forth. I know Ed Bortz has heard this example because he knows quite a bit about our team. A few months ago there was one very impressive example of this. The student was the son of a very prominent physician and the boy was a very smart boy. I thought he should have lots of potential, but he did a poor job handling this elderly person.

Afterwards I started talking with him. I said, "How come? You know a lot about medicine and handling patients."

He said, "You know what went wrong? As I was sitting there I started feeling, 'Boy, this is just like talking with my Dad. Whenever I go home at vacation time and start telling him about the new things I have learned, he gets very upset with me and says, 'Just wait until you get out into practice, you won't believe all this new stuff.' " And he added "I felt exactly that way because I was telling this patient about these new things and I just suddenly couldn't do it."

Here is a clear example then, of how you can sometimes really get previous experiences mixed up with present ones.

We have also found these other factors: Many young men and women do not like the dependency relationship they receive from older people. They don't like the older person who treats them is if they were a parent. The younger nurses, particularly, get upset. They say, "I don't like Mrs. so and so treating me as if I were her mother. After all, I am 20 and she is 72. I would like to be her mother but I am not going to be the mother of a 72-year-old-woman." This is the sort of thing you find among the nurses and medical students.

They also see the deterioration or decline and they are averse to thinking, "This could happen to me." Even worse is looking at the patient and realizing that there isn't much they can do. This lowers their self-esteem, like saying, "As a doctor I ought to be able to do more."

Thirdly, we all know that these patients are more time-consuming. We did not do this in all of the clinics, only in the dermatology clinic, where a time clock was held on a large number of patients to see how much time they took to get through the ordinary evaluation, history and physical. We found that as you go up the scale, more time is required of the doctor to do it. When you get up in the seventy-year groups, it takes about three times as long to do the dermatological survey and evaluations as it does in a young adult. It is quite clear then that the physician who is scheduling his appointments gets very concerned when he realizes that this procedure is going to interfere with his scheduling.

As far as I am concerned, these are realistic things and as doctors we have to look at them.

Let's talk a little bit about how you handle these old people or anybody who is a hypochondrical person.

First of all, we have discovered the hard way that there are some things—and this is written in some of the supposedly good psychiatric textbooks — you never tell a person of this kind. You avoid pointing out that it is their imagination, or that it is all in their heads, or that they are a little off their rocker and that really all they have to do is go back to work. This, in our experience, is a very dangerous thing. When we first started out, we went into this because one very prominent person in psychosomatic medicine said that you should explain to such a person how the central nervous system works and how such symptoms can appear without real underlying organic pathology. If any of you have ever tried to do this, you have found this to be quite an undertaking. To do this skillfully is very difficult — at least it is for me — and in addition to that, we discovered that patients resented it. They resented very much feeling that they had an organic disease and then having the doctor after he has completed a thorough examination, sit down and say, "Mr. Jones, I have examined you very carefully, I cannot find a thing wrong with your body. It is quite evident that you are very nervous or that you are anxious about something. It is your imagination." This suddenly strips them of a defense, and they feel they are inadequate. They translate it, "You have a symptom which shows that your mind is not functioning right. You are an inadequate person." They develop the symptom to begin with, because they were inadequate. You make them more inadequate by telling them or confronting them with the fact that this is really imagination and not a real symptom.

We drop this in a hurry. What do you do if you are now convinced there is really no solid explanation for this? We have discovered that we can say this to them: "We cannot find a reasonable explanation for your symptoms at this time. However, we are very interested in this and we are very willing to try to help you." What we really do, therefore, is tell a little bit of a white lie. We simply say we are not sure of the explanation — that we want to see them again. We really set up a way of following the case. We are setting up a deliberate dependency — relation to us. We really say, "We will take care of you."

One thing we found in a university clinic is that many of the patients that come to us have been "shoppers." They have been to see all kinds of doctors before and usually some doctor along the line has told them that this is their imagination. They are just sitting there waiting for us to repeat it. When we say, "We don't know the explanation, we want to try to take care of you," you can just sort of see them heave a sigh of relief, "This time somebody is going to look at me for a change."

We do our best to use medication. We use placebos — you can fight with me about this — I am very willing to use them. We use them simply because we again say we are willing to accept dependency. We have found through our social workers that these people utilize these things to take home and demonstrate to the doubters at home. At home it is usually the daughter-in-law or some person who knows that the father-in-law's symptoms are not organic; that they are neurotic in origin. They will tell them, "Grandpa, quit worrying, get out and do something. Quit worrying about your body. Dr. so and so told you there was nothing wrong. Why do you keep complaining about your pain?" But when we send them home with medication — with a nice bottle in their hands, or whatever it might be — then they say to their daughters-in-law "See, I am sick or the doctor would not have given me this."

Of course, we try to find some nice pretty labels. We do our best to try to use some sort of placebo that has to be specially made up, which looks good. I am against using drugs having a pharmacological action as an agent, because this produces complications. I would rather avoid it. We don't use Milltown or Equanil unless it is very plain that the patient is tremendously anxious and needs support in this area.

We are very careful never to tell a relative of the parent or the child of these parents, or any relative, that we think he is neurotic. They call us up. They want to see us. They call us up the next day and say, "Dr. Busse, I understand you saw my father-in-law yesterday. Could you tell me what you think about him?" This is always a trap. I say, "Well, yes, I really think this is not physical in the usual sense. He has an emotional problem." It is never kept a secret. Even though we warn them, "Now please don't tell him, we want to handle this in our way, you keep your nose out of this,"— it doesn't work because they wait until they get mad at the father-in-law and then tell him, "Oh Dr. Busse told me three weeks ago, this was all your imagination." Then the patient comes in, or never comes back again because he is so mad at me that I betrayed him.

We tell the relatives what we tell the patient. That we don't know the explanations, we know that he is certainly terribly uncomfortable. We do want to help. And we usually stick this in, that it is possible we want you to help us at some later time, and we may call you. This makes them feel cooperative; that we may need their help. It switches them from one who is critical of the person's illness to one who is working with the doctor. We start devising a whole plan.

I realize I have run out of my time, but this is really what we do fundamentally. We bring them back repeatedly, we insist upon tight time-schedules. We make sure they understand how long they have to see us. We do go over their physicals repeatedly, never allowing them to dictate to us what medical procedure to do. This can be a real error. We never do a gastrointestinal examination because the patient wants it. We never let them become the doctor. We make the decision. If it is my decision that I ought to get gastro-intestinal series, that is something else, but it is certainly not the patient's decision.

Some patients will say, "Don't you think I ought to have another GI series?" We just avoid this sort of thing and say, "No, this is not what we feel is necessary. We are doing our best to understand this. You follow our way and we will try to take care of you." We discover then, that within somewhere around ten or twelve interviews, which usually run about twenty minutes, we can do quite an important job of switching these people. We usually discover after about six to eight interviews that they start talking about their personal concerns, about their family, about society. Then we start urging them to get into some activity —to get some outside interests, and we support them by saying, "We know you have not been feeling too well, but go ahead and try. After all, if it doesn't work, you just come back here and we will try again. We will make sure we are going to take good care of you."

We give them a lot of support and gradually move them out. I really think that some of these things are controversial. I think many of you may have developed your own schemes, but in our hands we found this has been a very practical approach. It is teachable to residents and medical students, and it has reduced the cost of the chronic complainers in the clinic enormously. This is a very clear and economic approach.

Thank you very much.

President Shands: We now have the last speaker, Dr. Roberts, who is Executive Director of the National Society for Crippled Children and Adults. Before he took this position he was Executive Director of the National Commission on Chronic Illness. Dr. Roberts' field is now dealing with the aging as well as children. Although this Society was organized for children, it extended its activities at the end of the war to the adult. Dr. Roberts.

Dean W. Roberts: Dr. Shands, gentlemen:

In the presentations of the discussants there have been a number of references to death. It reminded me of a comment I saw a few days ago, that while it is true that death and taxes are always with us, at least death doesn't get any worse as time goes on.

There have been comments made on the point of how long people live now and how long they may live in the future. But I have heard that the most reliable statistic of all is the fact that one out of one dies, and even though we may succeed in prolonging life and in prolonging good health, the fact remains that one out of one dies.

I think we can also be reasonably sure that the story of the deacon's one-horse shay is not going to apply to the manner of the man's death. You recall the shay was perfectly made and it ran well for a hundred years and a day and then all of a sudden wore out all at once and fell in a pile of dust. Well, nice as that might be in the field of human life and death, it doesn't work that way. Even though we may live to be a hundred, I think it is reasonable to assume that we can anticipate that the body will continue as it now does to break down unevenly and that there will be on the average a fairly substantial period of varying degrees of disability which precede death.

This means that we have now, and will probably continue to have for the foreseeable future, a very large group—and possibly an enlarging group—of substantially disabled oldsters.

You are familiar with the statistics documenting the aging of the population. Within the period of life for most of us in this auditorium the number of persons over age 65, has been multiplied four times. The prospect is, that this process of aging has by no means run its full course, and we can anticipate increasing numbers of aged persons and increasing numbers of partially disabled aging persons.

This public concern about the health problems of the aged, of which Dr. Orr spoke, stems primarily from two facts. One is the substantially higher prevalence of illness and disability among the aged than in the general population. This fact was documented by studies of the Commission on Chronic Illness which found that the prevalence of disabling illness in those over 65 is around seventeen per thousand—those are persons who have been disabled at least three months—whereas in the population group between 45 and 65 it is only five per thousand—a difference of between five and seventeen.

In terms of hospital utilization, persons over 65 use four times as many general hospital days as do the general population. This is costly.

Coupled with this higher prevalence of disabling illness goes a larger volume of hospital and medical care and the costs that are associated with that. The other side of the coin is the well-documented fact that the aged on an average have low incomes. This produces a pinch that is giving rise in Congressional circles to legislation to meet this problem.

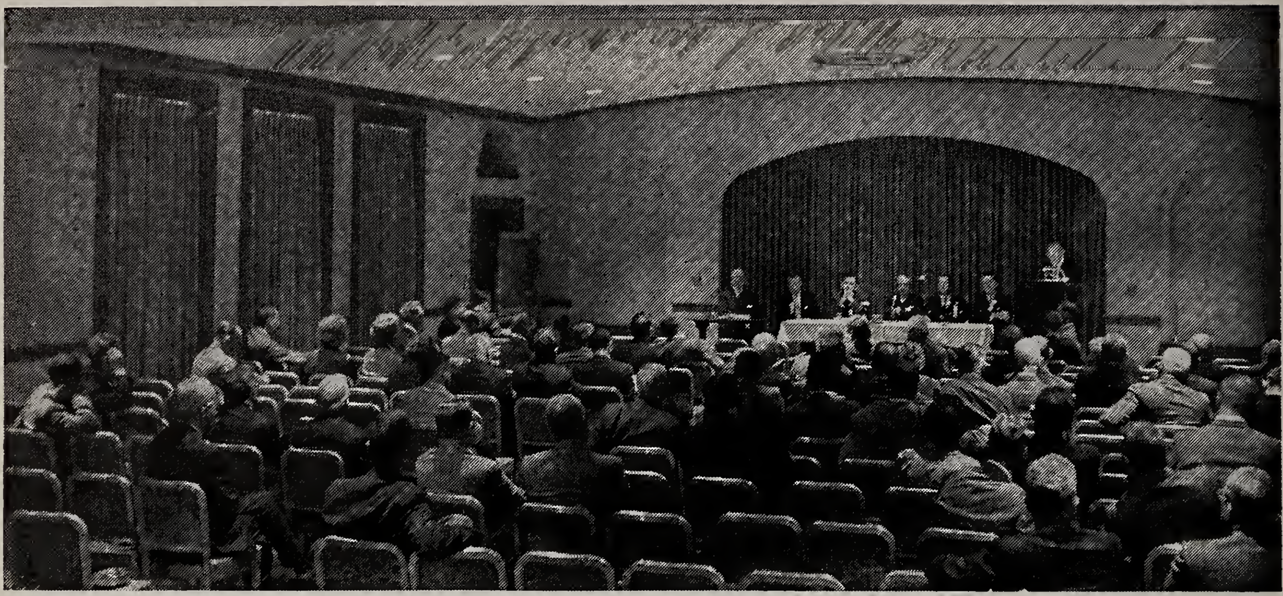
Fifteen years ago, plus or minus, the medical profession with other groups, was successful in overcoming the immediate threat of the Murray-Wager-Dingel type of socialized medicine, and in the subsequent period, voluntary health insurance has grown to the point where for most of the population, it meets the bulk of the need.

We are now facing this demand for something to meet the health needs of the aged person. These pressures for legislative approaches are very great, and there is real danger that something undesirable will pass through the Congress. We need a breathing period of five to ten years to continue to increase the voluntary health insurance coverage of the aged population along the lines that Dr. Orr outlined—to the point where it is really meeting the need. But we do need this period of time.

I know of one or two other things that the A.M.A. has been doing in an effort to meet the needs of the aged. A very large body of the disabled aged are cared for in nursing homes. It is not fully realized what a large and important group of sick people this represents. There are approximately half a million people in nursing homes. They represent a very substantially disabled group. About a third of them are incontinent, and 40 per cent are unable to walk for one reason or another. This is a distinctly aged group. The average age of of the person in the nursing home is 80. This is a group which habitually in this country, has frequently received inadequate professional service.

A few years ago, some of the far-sighted persons in the nursing home field came to the American Medical Association seeking the assistance of the medical profession to upgrade the standards of care in nursing homes. As a result of these discusions a liaison committee was named by the A.M.A. on which I have served, which met with a corresponding group from the nursing home operating group. This group is depending upon the A.M.A. to assist them in developing standards that will improve the quality of services to this aged group, and they will be depending upon state and local medical societies to join locally in developing practices which will result in a higher level of care for the severely ill in nursing homes.

One of the studies that the Commission on Chronic Illness conducted, was in Baltimore. It brought out some points which I believe would be of interest to you. We took a random sample of the population in Baltimore; we studied the occupants in every eightieth household in the city. We gathered certain data from them through household interviews and then drew a representative sub-sample and arranged for a comprehensive medical evaluation in the out-patient department of Johns Hopkins Hospital. This comprised a group of patients slightly different from those that you see every day in your office. This was a true representative sample of the population. It included all kinds of people. The purpose of this study was to determine the prevalence of particular types of chronic illness. In the course of determining that prevalence we encountered some disquieting findings in regard to the attitudes that patients had toward medical care, toward physicians and towards hospitals. We found that although there were large numbers in the group studied who had fine, positive, constructive relationships with their source of medical care — their physician — there was also a substantial number who either had never had that confidence or had lost it by reason of experience which they regarded as unsatisfactory. This was truer of the aged group than it was of the younger ones, and I think it relates to the comments that Dr. Busse made in regard to the depressed patients — the hypochondriac patient — and the difficulty which physicians have in satisfying the needs of those patients.



Panel Discussion group — "Growing Older" held in the auditorium of the Delaware Academy of Medicine, October, 1959. Dr. Alfred R. Shands, Jr., presiding as moderator.

We found many patients who took this position in the older group: "If there is something wrong with me, I don't want to find out about it." They had fears. They were unwilling to face reality in terms of what their health condition might be. We found substantial numbers who had had experiences with hospital out-patient departments or with private physicians which to them was so unsatisfactory that they declared that they would never see a physician again. Of course they probably would if they were in an emergency situation. But on the basis of these observations we concluded that in the city of Baltimore five years ago, the physicians and the hospitals were not generally succeeding too well in satisfying the emotional needs of the older person.

A similar study was conducted in a rural area in New Jersey, and corresponding findings were developed there. I am not in a position to explain why this should be, but I suspect that one of the issues involved is that the older person with these problems cannot be satisfactorily dealt with medically, very rapidly. It takes time. They require a physician who will hear them out. They need to be listened to as well as talked to. And there is a real question of whether or not such care can be financed by these patients because if a doctor is going to allow a half hour or more to a visit by one of these patients, can he in fact charge these patients a fee which will enable him to render this type of care on a large volume?

Nevertheless, here is an issue: The needs, the type of care which many of these older people need requires an attitude on the part of the physician that invokes a willingness to hear them out, to listen to their problems, to counsel with them in repeated visits over a long period of time. There are not many practitioners who feel that they can devote this kind of time to the older patient, but somehow or other I believe we must find a way to satisfy these emotional needs.

Thank you.

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ANNUAL MEETING, Medical Society of Delaware

Rehoboth, Delaware September 8, 9, 10, 1960

A.M.A. IN ACTION ON AGING*

Louis M. Orr, M.D.**

As president of the American Medical Association, I have been asked one question over and over again, by both doctors and laymen: What is the American Medical Association doing about the needs of the aged?

Although some might regard this repetition as a nuisance, to me it has been an indication of the strong interest throughout our nation in an important question.

Therefore, as my contribution to this seminar, I would like to run down a list of just what the American Medical Association *has* done, *is* doing and *plans* to do. Perhaps this might be of help to anyone here who might be snagged by the question.

1. First of all, our concern for the health care of the aged extends back several years, to the forming of the A.M.A. Committee on Aging. Although formed originally as the Committee on Geriatrics to study health and medical problems of the senior citizens, this committee soon discovered it could not limit its scope to one set of needs, but rather had to consider the many needs of the aged, such as psychological, emotional, occupational, financial and social.

2. Last December, the A.M.A. House of Delegates took a major step by calling on physicians to reduce their fees when treating those elderly patients with modest resources or low family income. This move was designed to stimulate the development of low-cost health insurance for the aged.

3. In the last 10 months state and local medical societies have worked vigorously to implement this program. Many states, including Delaware, have worked through their Blue Shield plans to help provide insurance tailored to the needs of the aged. There are now 25 plans in 23 states in which Blue Shield plans enroll those over 65. And commercial insurance firms have cooperated in offering guaranteed renewable contracts, "paid-up-at-65" and "65-plus" policies.

4. A series of A.M.A.-sponsored conferences on the needs of the aged already have started, and will continue on through Spring. The first of these took place at Boston during September, and the second is going on right now in Minneapolis. The conference for this region is tentatively scheduled for March 30 and 31 in Baltimore.

5. Important testimony has been presented by A.M.A. officials before two Congressional groups during the last few months. The House Ways and Means committee, holding hearings on the Forand bill, heard from Doctors Leonard Larson, Frank Krusen and Frederick Swartz, all of whom presented the medical profession's opposition to Forand-type legislation. During August, Dr. Swartz again travelled to Washington, this time to testify before the Senate Subcommittee on Aging.

In all the testimony offered, these doctors not only gave their reasons for opposing government medicine, but carefully traced what the American Medical Association is doing to help the aged, and what remains to be done.

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*Delivered before "Seminar on the Aged" Medical Society of Delaware Wilmington, Delaware, Thursday, afternoon October 15, 1959.

**President, American Medical Association.

6. To assist the state and county medical societies in our fight against unsound legislation, we have prepared a special kit, called "Aging — A Community Responsibility," which you should be receiving shortly. This kit should be of great help in getting American medicine's message to the people.

7. We are working to reduce the cost of services, which calls for new and improved facilities specially tailored to the particular requirements of the older citizens.

The A. M. A. has supported a government-insured loan program of the F. H. A. type for non-governmental hospitals and nursing homes, whether of a non-profit or proprietary nature. It has recommended changes in the Hill-Burton act to help the individual states earmark more money for non-profit nursing homes.

8. The A. M. A. continues to back further experiments with progressive hospital care; home care programs, and homemaker services, all of which have the common purpose of reducing the length of hospital and nursing home confinement by allowing the earlier discharge of patients.

9. At the Boston Conference on Aging, Dr. Allman, past president of the A. M. A. and member of the Committee on Aging, appealed for a jobs-for-the-aged campaign. This is part of the broad positive A. M. A. program of helping the aged help themselves.

10. Our stand on *compulsory retirement* has become widely known, particularly through the testimony before the congressional committees. We cannot hope to begin to meet the needs of the elderly until we can encourage employers to retire elderly workers solely on the basis of ability and worth, rather than an arbitrary age. Once we accomplish this, I personally believe a large percentage of problems associated with old age will solve themselves. If people have an income, something to do, a pleasant place to live, good community standing and self-esteem, they cannot help but live pleasant, rewarding lives.

In all these steps, we have tried to drive home the realization that aging is not something that we can talk about in general terms. It differs from individual to individual, and the needs of the aged must be approached on an individual, voluntary basis.

The only way America's 16 million senior citizens can be helped adequately is in the family and in the community. But the best assistance we can give is to help the aged help themselves.

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EASTER SEALS HELP CRIPPLED CHILDREN

The Delaware Society for Crippled Children and Adults is now receiving referrals to Fairlee Manor Camp for crippled children, located near Chesapeake Bay about 7 miles from Chestertown, Maryland.

Any child physically impaired because of illness, birth defects, or accidents, between the ages of 7-16, will be considered if there is no apparent mental retardation. The fee is $40 for a two week session, starting the 19th of June and extending through the 12th of August. Referrals will be accepted until the 1st of June.

MUST TIME TAKE ITS TOLL?

Theodore G. Klumpp, M.D.*

A century and a half ago, the English writer Horace Walpole wrote these lines: "*About the time I die, or a little later, the secret will be found of how to live forever.*" Feeling that enough time had passed to answer Horace Walpole, Helen Bevington whose husband is a professor at Duke University, wrote:

> "Horace, be comforted to die.
> One century has meandered by
> And half the next since, it was true,
> The temporal state eluded you.
> Now as I read your pensive letter,
> I wish myself that times were better
> And I might boast how men contrive,
> As you foretold, to stay alive.
> By now we should possess the key
> To fleshly immortality
> And, if we wanted to, endeavor
> To live forever and forever.
> This, to my infinite regret,
> Is not a custom with us yet.
> I write you Horace for good cheer
> Life is about as usual here."

Certainly a man as learned as Horace Walpole was not entirely serious when he forecast that someday the secret of how to live forever would be found. This no doubt is asking too much, and something that does not appear to fit into the biological scheme of things. Only the simplest unit of life, the cell, goes on sometimes indefinitely by division or budding. With this possible exception all living things from century plants to elephants go through a cycle of growth, senescence and death.

At the same time the biblical three score and ten was written a long time ago, some 3,000 years before the dawn of man's scientific awakening. In this, what seems to me the greatest century of all time, we have suddenly burst the bonds of darkness and ignorance that have tied men down, as crawling creatures on the surface of the earth, and led them to early graves. We have learned to split the atom, regarded for more than 2,000 years as indivisible — the smallest unit of matter. We were once earthbound and now even the earth and gravity are powerless to contain man's ingenuity and imagination. For all the gains that have been made, do you suppose the last word has been said, and the last gain realized in man's fight against disease, disability and death?

The Life Span

Right now in Air Force Space Medicine Laboratories throughout the country, man's endurance and ability to stand adverse conditions is being tested. He is being subjected to oxygen deprivation, low atmospheric pressures, excessive acceleration and deceleration, wind blasts, prolonged confinement and darkness, and a host of other labors of Hercules. The previous measure of man's ability to endure adversity has been found to be false. In a similar way, what yardstick do we have to measure man's ultimately attainable life span? If man can't live forever, to what limit is it reasonable to expect that he might be able to survive? If anyone attempts to give a firm answer to these questions he might find himself in the position of the Commissioner of Patents who stated in 1844, "We see the arrival at that period where human improvement is at an end."

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*President, Winthrop Laboratories.

The Biological Capacity Of Man

However, we can at least approach it in another way. Let us take the age of the person known with assurance to have lived the longest. This may be 117, or 146 for the Dane, Christen Jacobson Dragenberg, or something even beyond that, as claimed by the Russians. From such an example we can draw the conclusion that man has the biological capacity of living at least that long. If one man can endure for 146 years, or whatever the oldest attainable age, our scientists and physicians should and will eventually make it possible for many more to live to such a ripe old age. It is even conceivable and at least possible that one day this will come to be our life expectancy.

But it does not at all represent man's ultimately attainable life span. The cells of the body, with the possible exception of nerve cells, are being constantly replaced by new cells. If a way can be found of continuing this replacement for a more prolonged period at the rate it occurs in youth, and in some way holding the cells of the Central Nervous System alive and active for a longer span, there is no knowing to what ages man may be encouraged to live. George Bernard Shaw may have been thinking of something like this when he said that modern man is not God's last creation. But this is a large order, perhaps an even impossible one. At any rate it is something you and I should not expect to come to pass in our lifetime.

While waiting for the arrival of that millenium shall we sit by and do nothing or shall we utilize and apply what we think we now know concerning the aging process. This is not so simple as it may seem, because in the present state of our knowledge there are very few facts and observations that are beyond dispute and differences of opinion even among the experts. In the study of problems in this field we are badly handicapped by the fact that the investigator doesn't live any longer than his subjects and he doesn't have the advantage of observing even a single generation from beginning to end. Because of this the achievement of absolute and unquestioned scientific proof of the many basic facts concerning the aging process takes years and even generations in the life of man. In this respect solid progress in this area is particularly difficult to achieve and the science of aging is at a particular disadvantage in comparison with other fields of medical endeavor.

In the utilization of knowledge, particularly in the field of human welfare, we cannot always wait for complete scientific agreement, for absolute certainty, before employing to the benefit of mankind such knowledge, imperfect and incomplete as it may be. After all, we do pretty well treating many conditions such as diabetes, arthritis and cancer without knowing even their basic causes. In order to save years and even generations of time, we are justified in applying working hypotheses based on a reasonably high order of probability. In doing this, we can often turn to basic biologic and physiologic principles for guidance. With all the conflicts of opinions and impressions, the history of medical science has demonstrated over and over again that those views in accord with such basic principles will eventually turn out to have been correct.

Principles To Bear In Mind

With these considerations in mind, I would like to discuss certain principles that appear to have a bearing on the aging process.

Arteriosclerosis, or atherosclerosis, if you will, appears to be the most important present limiting factor in our life span. It appears to be the basic pathological process responsible for the proponderance of deaths due to coronary and cerebral thrombosis, cerebral hemmorrhage, and nephrosclerosis. It causes over a million deaths annually, and the evidence indicates that the toll is rising. While atherosclerosis appears and develops as man ages, there are good reasons for believing that it is not in itself the basic aging process. It does not occur at all in certain animals as they age. It appears not infrequently in children, particularly diabetics, and at times, there is remarkably little evidence of it found in older persons who have died of some other unrelated condition. It appears most pronouncedly in association with abesity, diabetes, and severe hypothyroidism.

To throw up our hands and say that atherosclerosis is merely something that is inherited is to say nothing. The mere observation that the same change may take place in related individuals is interesting, not at all surprising, and of no consequence in getting at its fundamental nature. There is a physical or chemical change that is responsible for this phenomenon and this is what we are primarily interested in identifying.

Tensions Advance With Civilization

It is a strange circumstance that disability and death from atherosclerosis should be on the increase coincident with the phenomenal advances in our civilization, and standard of living, a period marked by so many other gains in health, comfort, and human well-being. Some of this apparent increase is due to more accurate diagnosis and the fact that other causes of death, which have claimed young lives, have been reduced. Nevertheless most students of the subject are convinced that the increase is real in both a relative and absolute sense. Some have ascribed this situation to the the anxieties and tensions of the modern world. Unfortunately, I cannot find this explanation convincing. Since the dawn of civilization every age has had its tensions and anxieties which I have no doubt, have always seemed the worst ever to those living at the time. By what standard, by what instrument of precision, are we qualified to conclude that now has come the ultimate? I rather suspect that the lurking dangers of the jungle, the savage terror of the unknown, the looming threat of pestilence and famine were just as real worries in times gone by as the atomic bomb is today. But more important than national or international tensions as sources of anxiety, are the personal every day problems of the individual. His own individual disappointments, frustrations, losses and bereavements are the more potent, real and immediate sources of anxiety, and these have been present so long as man has enjoyed the mental and emotional attributes of a human being. The so called swift tempo of modern living has significance only in how we adjust or react to it. One man can fly at 2,000 miles an hour, as does my son, and feel as if he were standing still. Another rolls along with a horse and buggy and feels as if he were flying. Indeed were strain, tension and anxiety the critical factors in the etiology of vascular accidents, I see no reason why they should not occur more commonly in young individuals where these forces are often at their maximum intensity. On the other hand, there is good evidence that vascular accidents are the result of atherosclerosis and I have found no convincing explanation of the role of anxiety in the pathogenesis of this process.

Other Factors

But perhaps there are other factors in our civilization and way of life that should be considered as possibly having a bearing on the increased incidence of arteriosclerotic heart and vascular disease. Perhaps not all the products of technological gain have been benficial to man. It would be surprising if they were. Our scientists and engineers have been and are increasingly on a mad rampage to develop not only labor saving devices but every conceivable gadget to enable man to avoid effort, exertion, and activity. We no longer tend the furnace, or carry out the ashes; we drive a block for a newspaper instead of walking, and for even this we no longer need use muscles to steer, apply the brakes or open the windows, and we are more tired than our fathers and fathers' father used to be when they ran, walked, chopped wood, shoveled snow, dug ditches, pitched hay, stoked the furnace and did all the physical chores so abhorrent to the mid-twentieth century. Have you ever seen anyone take a single step on a moving escalator? If you have, it was probably some odd ball like Hans Kraus of New York or Doctor Klumpp. We are imbued with the idea, without the benefit of scientific rationale, that physical exertion and stress, particularly in adult life and middle age, is harmful. This has taken the form of a national psychosis that has swept the country like an ancient plague. *We are afraid to live for fear of dying.*

It was Theodore H. White who said that the history of contemporary civilization is the story of the displacement of food as the principle source of energy by coal, petroleum, water power, gas, and I may add atomic fission. But we go right on stoking our human furnaces as we did when brawn and muscle power made the wheels of the world go round. Does all of this carry with it a penalty in terms of the degenerative diseases, heart disease, and arteriosclerosis? We don't know, but some of us are beginning to suspect that it might.

Rusting Out

Two important fundamental biological principles appear to have application to what we are talking about. The first is this: Tissues and functions that are not used, atrophy. There is no argument about the application of this principle to muscle tissue. The functional capacity of the heart and blood vessels is derived from their muscular structure and the manfestations of atrophy are clearly evident at all ages in the shortness of breath and reduction in work capacity that results from disuse. To me one of the most striking demonstrations of this is the astonishing rapidity and extent of the physical and circulatory deterioration that takes place as the result of a short period of immobilization in bed. In addition to the manifest effects in terms of circulation and muscles, we know that the bones lose their calcium, joints stiffen, clots form in the blood vessels, stones in the urinary tract, digestion is impaired, and the bowels and organs of excretion lose their functional efficiency. I have no doubt that the endocrines, in their delicately balanced interrelationship, suffer also. This immobilization in bed, and its effects, differ only in degree from the immobilization resulting from our so-called labor saving devices and present day attitudes toward physical activity.

Based on loss of motivation and interest and to a large extent because of the fear psychosis against exercise and exertion, our middle-aged and older people reduce their physical activities still further, to the same effect, and with what I believe is especially damaging if not disastrous results.

In addition to the consequences previously noted, atrophy of disuse accentuates the lessened capacity of older persons to react to stress. I have no doubt that such avoidable atrophy is a contributing factor in the death of older persons subjected to accidents, shock, operations, deprivation, stress, and prolonged illnesses.

Aside from its functional aspects, it is a depressing thing to see what can happen to the human figure, a thing of most exquisite beauty until misshapen by fat, atrophy, bulges, swellings, protuberances, pendulosities, and hernias. These are not necessary concomitants of the aging process, as the fine figures of many elderly ladies and gentlemen without corsets, girdles, belts and trusses bear witness.

Extremes Are Harmful

So much has been said and written about the harmful effects of stress that I'm afraid we have been left with an entirely lop sided view of its biological role. It has not been made entirely clear that extremes of stress, from the standpoint of intensity or duration, are harmful. In this connection it is safe to assume that extremes of any kind are harmful. Like potent medicines, the proper dosage is beneficial and even life-saving; too much is poison. In a similar way I look upon moderate or graded stress as necessary to the maintenance of good health, vitality, and an adequate reserve against the extremes of stress that in one way or another befall all of us. Functional capacities of all systems of the body can only be augmented through moderate stress. This I have no doubt applies to the mind and emotions as well as the rest of the body. This principle has, I believe, particular application to the aging process. After the prime of life, the peak of which comes at different times for the various functions of the body, a decline occurs. In my opinion this decline will proceed more slowly if the bodily functions are fully employed and through moderate and unfortunately descending stress, they are held to their maximum capacities.

What I consider one of the most important biological principles has a bearing on this subject and it is this, "Nature tends to eliminate those who have relinquished their functional usefulness."

Unfortunately nature does not appear to favor mind over matter, and the full utilization of only our mental capacities does not appear to be enough. I believe that we must do everything we can, as we grow older, to resist the inclination to slow the tempo of our living. I am convinced that if you will just sit and wait for death to come along, you will not have to wait so long.

* * *

NOTICES

Emergency Call Plan

The New Castle County Medical Society has inauguerated the Emergency Call Plan to improve the emergency coverage for the greater Wilmington area. The members of the Society are responsible, on a rotating basis, for evaluation of medical emergency and the service of medical attention for persons who do not have a regular physician or whose own physician is unavailable. A schedule, listing each doctor and the date for which he is on call for 24 hours, will be released monthly.

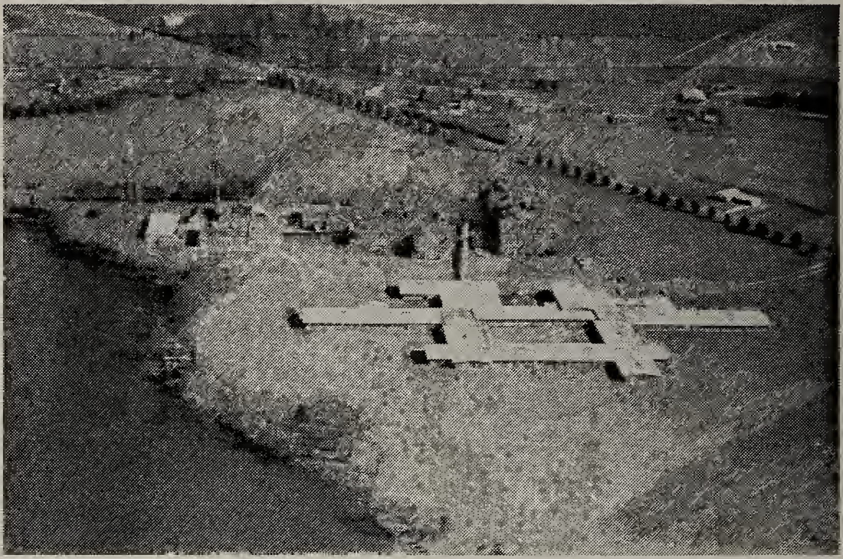
Case Reports — A Reminder

Requests for material for Case Reports have been sent out by the editor to members of the medical profession in Delaware. We are looking forward to starting this new feature in the Journal as soon as we have accumulated a back-log file. Keep them coming!

HAVEN FOR THE SENIOR CITIZENS OF DELAWARE

Delaware's Welfare Home and Hospital for the Chronically Ill was established in Smyrna, in 1933 for its senior citizens who need care in their oncoming years. From the beginning, the original members of the Welfare Commission carried on the administration of the institution "as a sacred trust in the nature of the Sermon on the Mount".

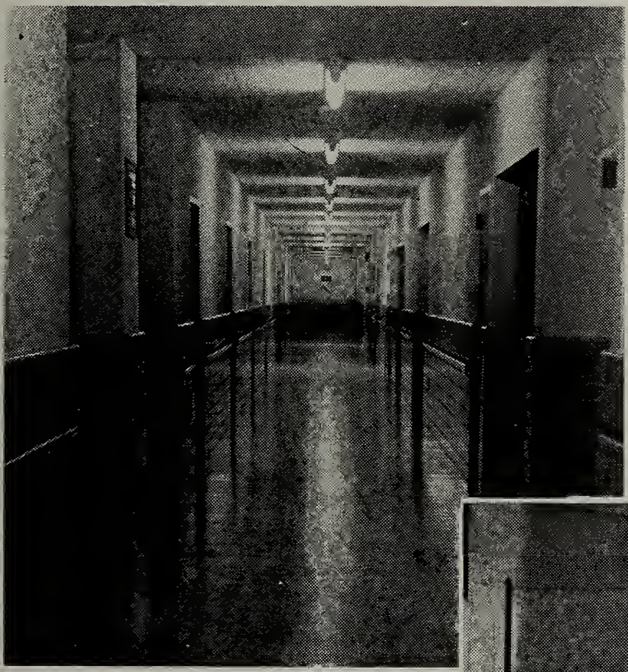
A $1,648,000 new addition, the Candee Building, was opened and dedicated in March of this year, and named for the Rev. Charles L. Candee — a retired Presbyterian minister, one of the original Board members. The addition, covering 69,000 square feet, has four large sections — two for men and two for women — caring for 200 patients; a large auditorium, library, four living rooms with TV and four dining rooms. The Welfare Home and Hospital for the Chronically Ill has been under the direction of Clarence J. Prickett, M.D., administrator for the past 18 years. The cost per patient is calculated monthly and presented to each patient who is deemed able to pay all or part of the cost. Those who canot finance themselves are taken care of by the State.



The State Welfare Home and Hospital for the Chronically Ill at Smyrna, showing the Candee Wing in the foreground. To the left — rear — the laundry, heating plant and operational buildings can be seen. The inside courtyard contains shuffleboard, games and other recreational facilities.

The Physiotherapy Room with its whirlpool bath, heat lamp and therapy equipment is completely functional in design.

Four attractive Day Rooms— one placed at the end of each wing — have been designed with modern furniture and fabrics, easy to take care of. The patients use these rooms for reading, relaxation and social contacts with one another. Note the hand rails along the walls, designed with other features in the room for the comforts of senior citizens.



Corridors are light, airy and unencumbered. Skylights give them pleasant light in the daytime. This photograph was taken looking up from one of the nursing stations. Again, note the hand rails.

View of a typical patient room, each with an outside view. Beds are all adjustable. Wash basins and mirrors — tilted back — are high an the walls for those in wheel chairs. The rooms are planned to encourage patients to care for themselves as much as possible.

President's Page

The Forand Bill is stopped temporarily. A recent vote of the Ways and Means refused to allow this bill out of committee. Efforts of the American Medical Association and our individual members were successful in informing our elected Washington representatives, as well as the general public, and prevented ill advised legislation being foisted upon an unsuspecting public. Letters from our Medical Society, Auxiliary, Chamber of Commerce and individuals were of great help.

Many of us fail to realize possible results of Forand type legislation. To the uninformed, free medical and hospital care appear very desirable. To the informed, Forand type legislation is undesirable for the following reasons:

1. The indigent aged who need hospital and medical care would not be covered by the Forand Bill.
2. Most of the aged group now receiving social security have existing forms of hospitalization.
3. Only two percent of our population are indigent.
4. The expense of setting up such a program is estimated at four billion dollars immediately and up to four billion annually. It is expected that Social Security taxes would reach a total of twenty percent in a very short time.

While we have time, each member of our Society should inform his elected Washington representatives and our patients of the facts — that political medicine will be bad medicine.

James E. Marvil

President, Medical Society of Delaware

Editorials

WHEN THE SIREN SOUNDS

"Speed is seldom, if ever, a factor in the preservation of a life. The excessive speed of ambulances has been shown to result in more traffic deaths than lives saved."

The above statement is by a joint committee of the American College of Surgeons, the American Association for the Surgery of Trauma, and the National Safety Council. It appeared in the Journal of the American Medical Association for April 2, 1960. The joint committee found that most of the deficiencies came under four main groups — wrong type of vehicle, lack of equipment, inadequately trained personnel, and ineffective laws — and recommended that *ambulances be regulated the same as other vehicles.*

In September, 1959 as *Five Minutes or Eternity* and in February, 1960 as *Legal Manslaughter*, editorials in this JOURNAL expressed concern about this subject. The editor of the New England Journal of Medicine has protested the police chase of stolen cars at dangerous speeds.

If one editor shows undue concern for a subject he may be considered a crack-pot. When several editors together with the joint committee mentioned above express a similar concern, it is possible that the crack-pots are on the opposite side of the fence.

Let us review recent developments in Delaware.

On April 17th an ambulance from Smyrna answered an accident call near Townsend. After picking up two injured persons, the ambulance allegedly went through a stop sign and collided with a car that was proceeding through a yellow blinker. When the final score was tabulated there were seven persons injured. The ambulance driver was in critical condition. The two "victims" of the original accident were discharged from the hospital after out-patient care in the accident room.

On April 18th a Wilmington physician while answering an emergency call, pulled his car to the side of the street and stopped when a vehicle approached from behind with its siren wide open and its red lights flashing. It was an ambulance that decelerated, but did not stop, for a red light at heavily travelled Fourth Street. The physician later discovered that the ambulance was taking a boy to the hospital because a layman thought he might be a cardiac. The boy had no organic disease.

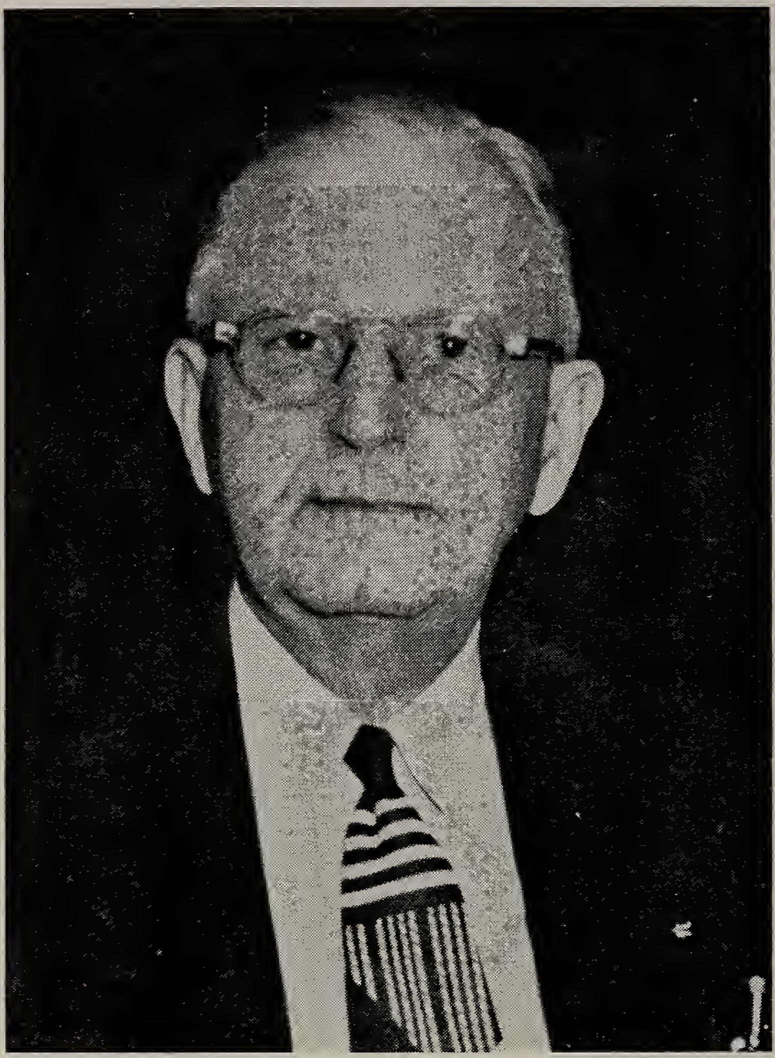
The next day the Journal-Every Evening in an editorial — *When the Siren Sounds* — abstracted the law regarding "Operation of vehicle on approach of police or fire department vehicle or ambulance," chided the average driver for his lack of compliance with the law, and published a list of penalties.

What can we do to help correct this situation?

We can endorse and publicize the findings and recommendations of the joint committee of the American College of Surgeons, the American Association for the Surgery of Trauma, and the National Safety Council. This should be done in an attempt to secure logical, just, and modern legislation on this subject.

The life you save may be your own.

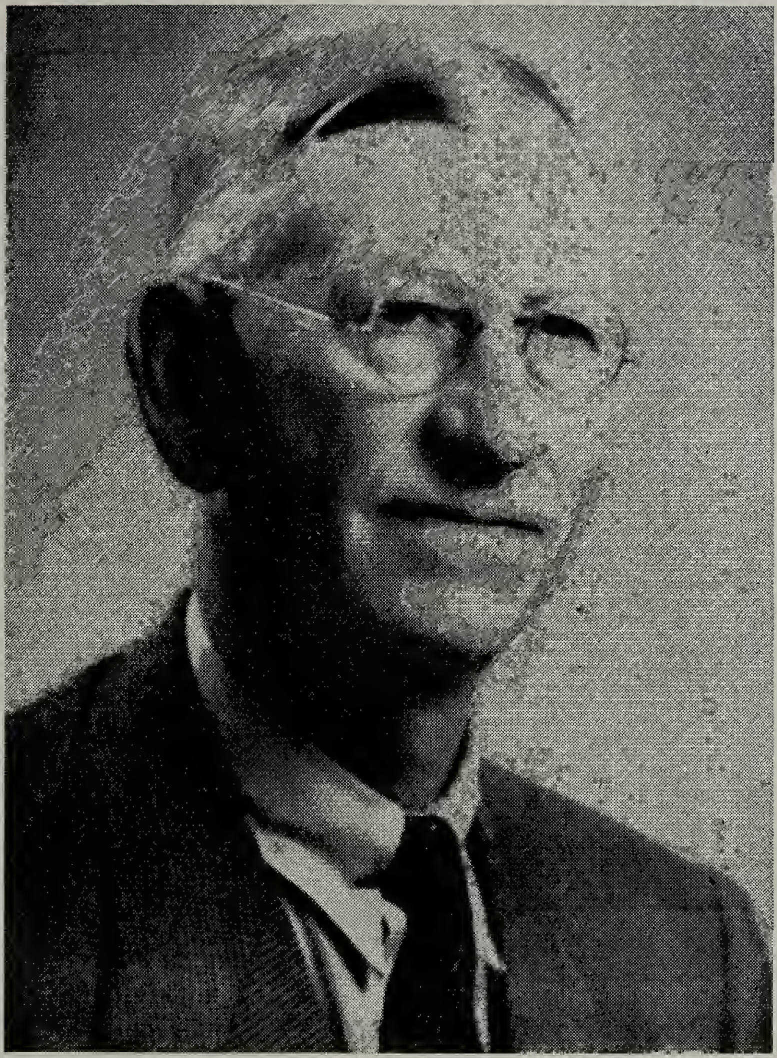
OLIN SUDLER ALLEN, M. D.



1883 - 1960

Wilmington cardiologist and founding member of the Delaware Academy of Medicine, Dr. Allen was born in Seaford and died in Wilmington on March 10th. He received his premedical education at Bridgeville High School, Bronns Preparatory School, and the University of Pensylvania. He received his M. D. from the Medico-Chirurgical College, now the Graduate School of Medicine of the University of Pennsylvania, in 1916. After interneship at the Reading Hospital, he practiced medicine in Wilmington until his retirement approximately ten years ago. For years Dr. Allen was one of the "regulars" at the Thursday evening cardiac clinic of the Pennsylvania Hospital. He was a fellow of the American College of Physicians. A member of one of Delaware's medical families, he is survived by Dr. Olin S. Allen, II, son of his brother, Dr. B. M. Allen.

DORSEY WAITMAN LEWIS, M. D.



1873 - 1960

After sixty-four years of active medical practice, sixty-one of which were spent in New Castle County, Dr. Dorsey Lewis died on April 19th. Born in Lee Mont, Accomac County, Virginia, he attended Western Maryland College from which he received his B. A. and M. A. degrees. He received his M. D. from the Medical School of the University of Maryland in 1896. After practicing for three years in Parksley, Virginia, he moved to Odessa in 1899 and to Middletown in 1903.

Dr. Lewis was President of the Medical Society of Delaware in 1924. In addition to his active practice in which he delivered over three thousand babies, he was engaged in civic and business affairs. He was a member of the board of trustees of the Delaware State Hospital.

In Brief

Hypnosis Not Black Magic

William T. Reardon, M.D., of Wilmington, demonstrated the medical uses of hypnosis as part of a week-long series of lectures at the 33rd Annual Spring Congress of Gill Memorial Hospital, Roanoke, Virginia. Dr. Reardon, an instructor in hypnosis at the University of Pennsylvania Postgraduate School of Medicine, used three doctors as patients to support his theory that hypnosis is a state of relaxation wherein the application of positive suggestion finds use as a medical tool.

On Ice

The Armed Forces continue to require the services of most physicians liable for military service under the Universal Military Training and Service Act. Lt. General Lewis B. Hershey, Director of Selective Service, issued a reminder to physicians that shortages exist and will continue in certain specialties. He further urged physicians not to draw erroneous conclusions concerning the need of the Armed Forces for their services.

New Officers

The Delaware Psychiatric Society elected Kurt Anstreicher, M.D., as president; Charles Strahan, Jr., M.D., vice-president; Albert L. Ingram, Jr. M. D., secretary-treasurer; and Harry Howard, M. D. and William Byrne, M. D., members of council.

The Diminishing GP?

Role of the GP is still an important one according to a current issue of *Patterns of Disease* (a Parke-Davis publication). An estimated 44% of GP'S in the United States still perform minor surgery. But the trend is increasing to specialized training. Between 1950-1958 the total number of physicians in this country increased by 9.5%; full and part time surgeons by 26%; anesthesiologists by 126%; the number of general practitioners *decreased* by 6%during the same period.

Fellowships

The Arthritis and Rheumatism Foundation offers pre-doctoral, post-roctoral and senior investigatorship awards in the fundamental sciences related to arthritis for work beginning July 1st, 1961. Deadline for applications is October 31, 1960. These fellowships are tenable for one year, with prospective renewal. Stipends are generous and laboratory expenses are paid. For further information and application forms address the Medical Director, Arthritis and Rheumatism Foundation, 10 Columbus Circle, New York 19, N.Y.

Half Century Mark

The 50th Anniversary of the Wilmington General Hospital was observed with special ceremonies on April 27th. Anson B. Nixon, president of the hospital, was the principle speaker. A portrait of Albert Robin, M. D. — one of the original members of the hospital's medical staff, whose efforts in behalf of the institution contributed to its success — was hung in the lobby of the Nurses Residence.

Lest We Forget

A table of some 30 drug products, produced by the pharmaceutical industry for diseases so rare that there is little or no financial return was published in last month's *New Medical Materia.*. The table shows that the number of patients served in these rare diseases — over the entire U. S. market — ranged last year from a low of 5 for maintenance of patients with hemophilia B to a high of 18,200 for patients sensitive to antitoxin made from horses. The industry performs this service because the need is tremendous to alleviate suffering.

Emotional Factor In Employees

A paper on *Emotional Problems in Employees* by Gerald Gordon, M. D., Chief, Psychiatric Section, Medical Division of the Du Pont Co., which was presented at the 6th Annual Industrial Health Conference of the Indiana Association of Industrial Nurses, has recently been published in the *American Association of Industrial Nurses Journal.*

New City Health Commissioner

Wilmington's health status was rated "good" by its new health commissioner, James C. Strong, M. D., formerly assistant director for public health for Dallas, Texas. He based his estimate on a brief review of the health program now in progress.

H-E-L-P

The American College of Obstetricians and Gynecologists has set up a Higher Education Loan Program (H-E-L-P) with an initial working fund of $36,000 to enable resident physicians to complete their training in obstetrics and gynecology. Loans up to $5,000 will be made. For information, write to Mr. Donald F. Richardson, Executive Secretary, ACOG, 79 West Monroe Street, Chicago 3, Ill.

APAA Exhibition

The 23rd annual exhibition of art works byAmerican physicians will be held June 13-18, 1960 at the Miami Beach exhibition hall and auditorium, in conjunction with the Annual AMA Convention. The show will include over 300 works of art in oil, water color, sculpture, crafts, photography and lithography. Participants and prospective exhibitors may obtain further information from Dr. Kurt F. Falkson, 7 East 78th Street, New York City, secretary of the American Physicians Art Association.

Hospital of the Atomic Age

Will the 'hospital of tomorrow' be the answer to heading off socialized medicine, the rising cost of conventional hospital care and the growing shortage of doctors and nurses? Plans for this hospital of the future were unveiled in Washington by officials of the Atomedic Research Center, a non-protfit organization which hopes to build a pilot model in Montgomery, Ala. within the next few years.

Mass-produced prefabricated materials would be used; the outer shell would be a giant plastic balloon held up by air pressure; disposable linens and prepackaged frozen meals would eliminate many services; automated electronic equipment would maintain a continuous record of patients' temperatures, heart actions, pluses, etc., reducing the need for routine rounds by doctor and nurses. Other radically different features are to be incorporated.

FOR THOSE SIXTY-FIVE AND OVER

BLUE CROSS-BLUE SHIELD COVERAGE AVAILABLE

It has been estimated that *Blue Cross* Plans cover 30% of the total United States population and 24% of people 65 and over. *Blue Shield* Plans cover 24% of the population and a proportionate percentage of people 65 and over.

The two significant features in Blue Cross-Blue Shield that contribute to a relatively high percentage of the aged enrollment these are the offering of a conversion contract to all who leave a group and the "no age limit" provision. Once enrolled as a member, there is no cancellation due to age, although in a few plans, benefits may be restricted after a specific age is attained.

In 1959 there were eight Blue Cross Plans that made special senior-certificate programs available for new members age 65 and over and twelve Plans offering non-group coverage without age limit. As of February 29, 1960 there were sixteen Blue Cross Plans offering senior-certificate programs for persons aged 65 and over and sixteen Plans that removed the age limit from their non-group enrollment. Blue Shield Plans have made comparable advances. At the end of 1959 there were thirty-two Plans with non-group programs available for persons over 65, three Plans with senior-certificate programs and twenty-three additional Plans with programs in various stages of development.

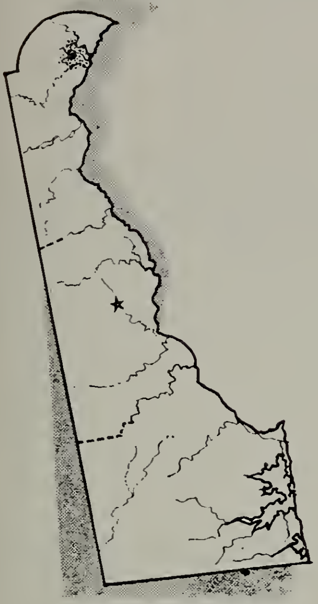
The Delaware Blue Cross-Blue Shield Plan has 60% of the State's population enrolled. Early in 1959 there were approximately 18,000 older Delawareans who were not members of Blue Cross and Blue Shield and 14,200 Delawareans 65 years of age or over who already belonged to the Plan.

In June a new combined Blue Cross-Blue Shield Program, the "65-Limited" Contract was made available to Delaware residents. The hospital portion of this contract offers standard Blue Cross benefits for thirty days of hospital coverage with $16 per day allowed toward room charges. These maximum benefit days are followed by thirty days at an indemnity allowance of $10 per day for all hospital services. To these in-hospital benefits, ten visiting nurse visits are added which will be covered at full charges. This program includes sixty days of nursing home coverage at $8 per day for the life of the member's contract.

The surgical-medical plan in the "65-Limited" Contract offers the benefits of the standard Blue Shield Contract with a few changes—in-hospital doctor's visits will be limited to sixty days of coverage to coincide with the Blue Cross benefits. The surgical coverage of up to $225 for the surgeon's fee, plus certain payments for anesthesia, x-rays and consultation according to the fee schedules, are the same in the new plan as in the standard Blue Shield Contract.

The rates for the "65-Limited" program are $6.48 per month for hospital-surgical-medical coverage for an individual and $7.96 per month for the same coverage for a subscriber and dependent child (or children) under nineteen years of age. Response to this coverage now approximates 500 new members in the Plan over 65 years of age.

Recently the Delaware Extended Benefits Program enrollment was opened to other than group subscribers. Subscribers, who left groups where standard coverage was available, were offered the opportunity to reapply for these additional benefits. In the future, this coverage, as well as standard Blue Cross-Blue Shield, may be converted to direct payment basis or to a pensioner group where a member leaves a company or retires. Blue Shield is making every effort to meet the needs of senior citizens as fully and practically as possible.



RESOURCES FOR OLDER PATIENTS

The Medical Society of Delaware has in preparation a pamphlet listing sources of care for indigent patients, and offering a guide to agencies which provide help in specific illnesses or to specific groups. From this are abstracted the following resources of particular interest to older patients and their physicians.

AGENCIES

These agencies provide help of various kinds in their areas of concern. Usually this is in the form of direct or adjunctive care. In some cases, financial assistance may be available.

American Cancer Society
Catholic Welfare Guild
Delaware Commission for the Blind
Delaware Curative Workshop
Delaware Heart Association
Delaware Society for Crippled Children and Adults
Delaware State Board of Health
Delaware State Hospital
Delaware State Welfare Department
Jewish Welfare Society
Emily P. Bissell Hospital
Veterans Administration Hospital
Visiting Nurse Association

CLINICS

This is a listing of hospital clinics in the city of Wilmington of special interest to older patients. Contact the hospital for complete information. The Delaware, Memorial, St. Francis and Wilmington General hospitals are designated by their inital letters.

Allergy (D, M, S, W)
Arthritis (D, M)
Audiology (D, M)
Cardiology (D, M, S, W)
Chest (D, M, S)
Chiropody (D, M, S)
Dental (D, M)
Dermatology (D, M, S, W)
Diabetic (D, S, W)
ENT (D, M, S, W)
Fracture (D)
Gastroenterology (D)
Genito-urinary (D, M, S, W)
Gynecology (D, M, S, W)
Hematology (D)
Hypertension (D)
Medicine (D, M, S, W)
Neurology (D, M, W)
Neurosurgical (D)
Ophthalmic (D, M, S)
Optometric (State Board of Health)
Orthopedic (D, M, S, W)
Peripheral Vascular (D)
Plastic Surgery (D, M)
Proctology (D, M)
Psychiatric (D, Delaware State, S)
Surgery (D, M, S)
Tumor (D)
Varicose Veins (D)

Books

Recent Accessions to the Library of the Delaware Academy of Medicine

ANATOMY

Gardner, Ernest; Gray, Donald J.; and O'Rahilly, Ronan: Anatomy, 1960. Saunders

BACTERIOLOGY

Burnet, F. M. and Stanley, W. M.: The Viruses Volume 1-3, 1959. Academic Press

Ciba Foundation: Virus Virulence and Pathogenicity, 1960. Little, Brown and Company

BIOCHEMISTRY

Ciba Foundation: Biochemistry of Human Genetics, 1959. Little, Brown and Company

CARDIOVASCULAR SYSTEM see also Pharmacology

Guthrie, Charles Claude, Harbison, Samuel P. and Fisher, Bernard: Blood Vessel Surgery and it Applications, 1959. University of Pittsburgh Press

Hoffman, B.: Blood Pressure and Subarctic Climate in the Soviet Union. 1958. Osteuropo-Institute

DENTISTRY

Grossman, Louis I.: Endodontic Practice, 5th ed., 1960. Lea and Febiger

Monheim, Leonard M.: General Anesthesia in Dental Practice, 1960

DERMATOLOGY see Pediatrics

ENDOCRINE SYSTEM

Astwood, Edwin B.: Clinical Endocrinology I, 1960. Grune and Stratton

Williams, Robert H., ed.: Diabetes, 1960. Hoeber

GASTROINTESTINAL SYSTEM

Allen, J. Garrott: The Physiology and Treatment of Peptic Ulcer, 1959. University of Chicago Press

GERIATRICS

Ciba Foundation: The Lifespan of Animals, 1959. Little, Brown and Company

Johnson, Wingate M.: The Older Patient, 1960. Hoeber

GYNECOLOGY AND OBSTETRICS

Ciba Foundation: Cancer of the Cervix, 1959. Little, Brown and Company

HEMATOLOGY

Brinkhous, Kenneth M.: Hemophilia and Other Hemorrhagic States, 1959. University of North Carolina Press

Leavell, Byrd S. and Thorup, Oscar A., Jr.: Fundamentals of Clinical Hematology, 1960. Saunders

INFECTIOUS DISEASES

Hunter, George W.; Frey, William W.; and Swartzwelder, J. Clyde: A Manual of Tropical Medicine, 3rd ed., 1960. Saunders

Top, Franklin H.: Communicable and Infectious Diseases, 1960. 4th ed. Mosby

MISCELLANEOUS

Ciba Foundation: Significant Trends in Medical Research, 1959. Little, Brown and Company

Feifel, Herman: The Meaning of Death, 1959. McGraw-Hill

Rees, Thomas R.: I Prescribe Laughter, 1st ed., 1960. Vantage Press

Smith, Homer, W.: From Fish to Philosopher, 2nd ed. 1959. Ciba

NOEPLASTIC DISEASES See Gynecology and Obstetrics; Respiratory System; Pediatrics.

PEDIATRICS

Bakwin, Harry and Bakwin, Ruth M.: Clinical Management of Behavior Disorders in Children, 2nd ed. 1960. Saunders

Bayer, Leona M. and Bayley, Nancy: Growth Diagnosis, 1959. University of Chicago

Gallagher, J. Roswell: Medical Care of the Adolescent, 1960. Appleton-Century-Crofts, Inc.

Perlman, Henry H.: Pediatric Dermatology, 1960. Year Book

PHARMACOLOGY

Ciba: Diuresis and Diuretics, 1959. Springer-Verlag

Seven, Marvin J.: Metal-Binding in Medicine, 1960. Lippincott

PHYSIOLOGY

Welt, Louis G.: Clinical Disorders of Hydration and Acid-Base Equilibrium, 2nd ed. 1959. Little, Brown and Company

PSYCHIATRY see also Pediatrics

Arieti, Silvano ed.: American Handbook of Psychiatry, Vol. 1-2, 1959. Basic Books

PUBLIC HEALTH

Paul, John R.: Clinical Epidemiology, 1958. University of Chicago Press

Brandt, Max, ed.: Current Problems of Soviet Medicine, 1958. Osteuropa-Institute

RADIOLOGY

Quimby, Edith H.: Safe Handling of Radioactive Isotopes in Medical Practice, 1960. Macmillan Company

RESPIRATORY SYSTEM

American College of Chest Physicians: Diagnosis and Treatment of Tumors of the Chest, 1960. Grune and Straton

Knowles, John H.: Respiratory Physiology and Its Clinical Application, 1959. Harvard University Press

SURGERY

Foman, Samuel: Cosmetic Surgery, 1960. Lippincott.

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American Surgeon, Vol. 26-

*Practionier, The, Vol. 166-

Auxiliary Affairs

Profile of Our President

"If you are ever asked to serve as president of the State Auxiliary, by all means, do so. It is a wonderful experience and a superb education in the important function of the Medical Auxiliary."

Mrs. Lemuel C. McGee, current president of the Woman's Auxiliary to the Medical Society of Delaware, voiced these thoughts in an interview for this article. She is convinced that every doctor's wife should be a member of the Auxiliary, and, if possible, an active one.

Habitually avoiding personal publicity, Mrs. McGee consented to this biography because we would like "Profile of Our President" to become an annual feature and serve to help us become better acquainted with each other.

Few of us would feel that we have the unique qualities which make Mary Virginia McGee an exceptionally capable president. Trite cliches take on a new fresh meaning when applied to her — she *is* a lovely, poised and gracious lady. Her infallible good taste is reflected in her appearance, manner, home and family.

Born in McKinney, Texas, Mrs. McGee grew up in Decatur and was educated at Baylor University in Waco. Following her graduation from Baylor, she taught and was school librarian at Baylor University School of Medicine in Dallas. Dr. McGee also received his undergraduate education at Baylor University, but the McGees met and were married in Dallas. After short stays in West Virginia and Boston, Dr. and Mrs. McGee came to Wilmington in the fall of 1940 when Dr. McGee accepted the post of Medical Director of the Hercules Powder Company.

Mrs. Lemuel C. McGee

The McGees have two children. Lenore, a graduate of Cornell University, is presently serving as research assistant in the laboratory of Dr. Francis Moore at Peter Bent Brigham Hospital in Boston. Madeleine, a junior at the Mt. Pleasant Senior High School, is looking forward to college but has not decided which one. Mrs. McGee and Madeleine spent last summer in New York City in order that Madeleine might pursue her special love, dancing.

This year, the McGees are enjoying the addition of a "French daughter, " Marie-France Toinet of Paris, who is here in this country under the AFS program. She is spending ten months in the McGee home and everyone seems to be loving it.

An unusually gifted and creative person, Mary Virginia is an adept painter and her oil paintings, some of which decorate the walls of the McGee living room, always draw enthusiastic praise. Mrs. McGee has temporarily deserted painting for sulpturing, and spends one day a week at the Delaware Art Center.

Another absorbing interest is Winterthur and Mrs. McGee has given one day a week for the past six years, guiding in the museum and studying American culture and history of the decorative arts in the excellent new library there.

Delighting in music ,the theatre, reading, travel and the activities of her teenagers, Mary Virginia's days are full and satisfying. How she has managed to include the work of the State Auxiliary presidency with such competence is still a mystery.

MAJOR MEDICAL MEETINGS IN DELAWARE

Standing Schedule

Beebe Hospital	General Staff	2nd Friday	Monthly
Delaware Hospital	General Staff	2nd Tuesday	Feb., May, Sept., Dec.
Kent General Hospital	General Staff	3rd Tuesday	Monthly
Memorial Hospital (Wilmington)	General Staff	2nd Tuesday	Jan., March, June, Oct.
Milford Memorial Hospital	General Staff	2nd and last Tuesdays	Monthly
Nanticoke Memorial Hospital	General Staff	1st Thursday	Monthly
St. Francis Hospital	General Staff	4th Tuesday 1st Tuesday	March, May, Oct. December
Wilmington General Hospital	General Staff	4th Tuesday	Jan., April, Sept., Nov.

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Kent County Medical Society	Monthly Meeting	3rd Tuesday	September - June
New Castle County Medical Society	Monthly Meeting	3rd Tuesday	September - June
Sussex County Medical Society	Monthly Meeting	2nd Thursday	September - June

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Delaware Academy of General Practice	Monthly Meeting	1st Tuesday	September - June
Delaware Pathology Society	Weekly Meeting	Each Friday	

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Special Schedule

American Medical Association	Annual Meeting	Miami Beach, Fla.	June 13-17, 1960
Medical Society of Delaware	Annual Meeting	Rehoboth, Delaware	September 8, 9, 10, 1960
Delaware Academy of Medicine New Castle County Medical Society Delaware Diabetes Association	Joint Meeting Speaker: Thaddeus S. Danowski, M.D.	Delaware Academy of Medicine	October 18, 1960
Delaware Academy of Medicine	Annual Lecture Speaker: Richard H. Overholt, M.D.	Wilmington, Del.	November 29, 1960
Delaware Academy of General Practice	Annual Meeting	Delaware Academy of Medicine	December 9, 10, 1960

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SARCOIDOSIS*

● An outstanding authority discusses all aspects of sarcoidosis from etiology, through widespread manifestations, to treatment.

J. D. Scadding, M.D.**

First, I must say how honored I feel to have been asked to deliver the first of what I am sure will prove to be a most important series of lectures. You are certain in the future to have many lecturers more distinguished than I, and it seems to me that I shall have to work hard in order to live up to my successors.

Definition Of Sarcoidosis

It is just as well at the beginning of a talk to define one's subject as clearly as possible. Of course it is always dangerous to try to state exactly what you propose to talk about. Oscar Wilde pointed this out in his play, "Lady Windermere's Fan." When in that play Lord Darlington is asked by the Duchess to explain what he really means, he replies, "I think I had better not, Duchess. Nowadays to be intelligible is to be found out." But at the risk of being found out, I shall attempt the task of stating exactly what I'm going to talk about.

The problem of the definition of sarcoidosis is a difficult one, which many people try to side-step by entering into an historic account of the way our concept of this disease developed. Yet the historic account is important because it puts the whole thing in its right perspective. These accounts start by telling us that the English surgeon, Jonathan Hutchinson, in 1877 described a peculiar skin eruption on the legs of a patient whose name was Mortimer, and that he published this under the title of "Mortimer's Malady;" a self-effacing procedure which few physicians these days would adopt. This was followed by further descriptions of the skin lesions by the continental dermatologists Besnier (1889) and Boeck in 1899 and 1905, from whose names the title given to the disease on the Continent of Europe, the Besnier-Boeck Disease, is derived. These dermatologists recognized at this time that although they were describing a skin lesion, there might be other manifiestations. They particularly noted that the lymph nodes and also the spleen might be enlarged.

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*Presented at the first annual lecture on "Diseases of the Chest," Wilmington, March, 1959. Sponsored by the Delaware Academy of Medicine and the Delaware Anti-Tuberculosis Society.

**Director of Studies and Dean—Institute of Diseases of the Chest, University of London.

The next contribution to the evolution of our idea of this condition as a recognizable disease group was made by Heerfordt, who in 1909 described a syndrome, which is called on the Continent of Europe by his name, of uveo-parotid pseudotuberculosis in which there is a chronic affection of the uveal tract of the eye giving rise to an iridocyclitis and enlargement of the parotid salivary glands. A little later, in 1914, Schaumann brought all these various manifestations together, pointing out that they had a common histological pattern, and also pointing out that they were often accompanied by radiological and other changes in the lungs. In 1919 Jüngling described specific changes in the bones of the hands which appeared to belong to the same general syndrome. Having given this sort of historical survey, many people talking about sarcoidosis make no further attempt at definition, but hope that their audiences will sit back happily, thinking, "Obviously he's talking about the same thing as all these authors he has quoted." But I think we must try to be more precise, and attempt a clearer definition than this.

Sarcoidosis Defined

It is important to realize that a definition should be a statement of the criteria by which, in principle, it can be decided beyond doubt whether any given example belongs to the category being defined. It is not necessary that the defining criteria should be such that in practice they can be ascertained in every case. In practice, we will also have a set of diagnostic criteria; these are features which are ascertainable in practice and discovered by study of the defined group to discriminate it more or less precisely from other groups, so that the presence of a suitably chosen combination of them will permit us to say with a high degree of probability that a case belongs to the defined group.

Let me give an example. Influenza can be defined as "an infection caused by the influenza virus;" but it is difficult to isolate an infiuenza virus, and in practice we are content with indirect evidence, such as a rise of antibody in the serum of the patient between the acute and the convalescent phase of a febrile illness, to indicate the probability of an influenza infection. Thus, a rise in serum antibodies is an acceptable diagnostic criterion of influenza.

Unifying Feature

The one unifying feature of all the various manifestations of sarcoidosis is a certain histological pattern. A definition cannot be based entirely on this, because it is well recognized that this particular histological pattern, which I shall refer to for brevity as non-caseating tuberculosis, is present in selected tissues in a variety of other recognized conditions. In an ordinary case of tuberculosis, the pathology of a lymph node at a distance from an active focus may show histological changes quite indistinguishable from those found in sarcoidosis. In certain chronic granulomata, for instance those associated with chronic brucellosis, isolated foci may show this histological pattern. But, in both these circumstances, in caseating tuberculosis and in chronic brucellosis, the general histological pattern, if all the tissues are examined, is different. A workable definition of sarcoidosis can therefore be made by adding to the description of the typical histology, the proviso that to establish the diagnosis of sarcoidosis this pattern must be present in *all* affected organs or tissues. With that proviso, I think, a purely histological descriptive definition will meet the case and give us a workable definition of sarcoidosis.

I therefore suggest this definition: Sarcoidosis is a disease characterized by the presence in all affected organs or tissues of epithelioid cell tubercles, without caseation, with little or no round cell reaction, the older lesions tending to become converted into a rather hyaline featureless fibrous tissue. That's really the end of the definition. We can put as an addendum: it may affect any part of the body, the lymph nodes, lungs, skin, eyes, liver, spleen and small bones of the hands and feet being most frequently affected, and the characteristic changes must be present in all the affected organs or tissues. We can add a second footnote:— At the present moment the etiology of this disease is not known. But that is a footnote to the definition, and it must on no account be put into the definition. A number of people who have attempted to definie sarcoidosis have fallen into a logical error by starting their definition with the statement that "Sarcoidosis is a disease of unkown etiology."

Open To Possibilities

You may think that it is a little frivolous of me to suggest as an objection to such a definition that it would imply that the discovery of its cause would abolish the disease so defined, because it would no longer be a disease of unknown etiology. But it isn't entirely frivolous. If we don't know the cause of this disease we must leave our minds open to the possibility that the histological pattern which characterises it may be caused by more than one agent; and if that is so, then if we discover one of those agents we shall have to separate off that particular group from our main group of sarcoidosis as defined, so that sarcoidosis is the poorer by that group. Then perhaps we discover another agent. Separate that group and sarcoidosis is the poorer for that group. Then we discover another one, and eventually we have one little bit left which happens to be the last group whose cause we find, and that will be all that is left of sarcoidosis. This does not seem to me a very intelligent procedure. It is much better, I think, to say nothing at all about etiology in the definition, leaving open the possibility of adding a term to the word sarcoidosis indicative of the etiology, if the cause of any given case can be established. I am sure that this is the most fruitful way of approaching discussion of the etiology of sarcoidosis.

Early Symptoms

To put before you briefly a picture of this disease is very difficult because it is so varied in its manifestations. It may present itself with manifestations in the skin. I mention this first, because that is historically the way it first came to medical attention. The most frequent way in which it presents itself, these days, is through its pulmonary manifestations, largely because of the widespread use of routine chest radiography. In the early stages, and sometimes throughout the whole course, the rather striking pulmonary manifestations may cause no symptoms at all, and for this reason they are frequently found on routine radiography of apparently well people. Sarcoidosis may come to light as the result of an appearance of a generalized enlargement of lymph nodes, and in such cases it can mimic such conditions as Hodgkin's Disease and other forms of reticuloendotheliosis. Quite frequently it comes to light because of manifestations in the eyes, such a chronic iridocyclitis, usually bilateral but sometimes unilateral. Occasionally, the patients first have general constitutional symptoms.

Frequent Symptom In England

A beginning of the disease which we see quite frequently in England is a febrile illness accompanied by erythema nodosum with or without an acute arthritis, rather like acute rheumatism. I understand that that sort of manifestation is less frequent in the United States than it is in England. Certainly, of my patients 10% have had this acute onset with erythema nodosum and acute rheumatism. A few of my patients have sought medical advice because of vague feelings of ill-health, without local symptoms of any sort, and this has led to the discovery of sarcoidosis. A rare manifestation which is worth mentioning because of its extreme interest, is the disturbance of calcium metabolism to which I will refer later.

Discussion of the relative frequency of the early manifestations of sarcoidosis is not very rewarding because the incidence in any series will depend very largely upon the interests of the physician who reports it. Naturally, if a dermatologist talks about sarcoidosis, all his cases have skin lesions; and all the cases going to an ophthalmologist are likely to have eye lesions. Among my cases, a large majority, naturally, have lung lesions. And it is very difficult indeed to get a true idea of the relative incidence of early symptoms of sarcoidosis. But even allowing for this bias, I think that it is the intrathoracic manifestations which most frequently lead to the discovery of the disease. However, I will start, because it is historically correct to do so, by pointing out some of the skin lesions that may occur in these cases.

Skin Lesions

Patients with sarcoidosis are subject to various types of skin lesions. A few typical skin lesions have been seen in the following cases:

A patient with plaque-like sarcoid lesions on the forehead and shins.

A patient with multiple nodular sarcoids on the back and a plaque on the forehead which had extended back over the hairy scalp, where it had caused scarring and loss of hair.

A patient with a diffuse sarcoid infiltration of the subcutaneous tissue of the upper arm.

A patient with severe lupus pernio involving the nose and cheeks and also the skin overlying phalanges also involved by sarcoidosis.

A patient whose old vaccination-scar became infiltrated with sarcoid tissue when he developed sarcoidosis of the hilar lymph-nodes and lungs.

A patient in whom multiple scars on the face, probably contaminated with siliceous dust since they were caused when he was blown up by a land-mine in the desert, became infiltrated with sarcoid tissue 8 years later when he developed pulmonary sarcoidosis.

A patient with erythema nodosum and bilaterally enlarged hilar lymph nodes who developed subcutaneous nodules in the forearms about 6 weeks after the erythema nodosum; these showed the typical histology of sarcoidosis, and subsided spontaneously.

Bone Lesions

The changes in the small bones of the hands first described by Jüngling are not ver ycommon. They have occured in only 2-3% of my cases, and usually they occur in association with quite extensive changes elsewhere.

I have never found x-ray examination of the hands to be of the slighest value in the diagnosis of an abscure case because changes in the bones of the hands tend to occur in the florid sort of disease which is easily recognizable from its multiple manifestations. There are two sorts of involvement of the bones of the hands. One causes small rounded transradiancies at the ends of the phalanges or metacarpals (or metatarsals). It seems to produce no symptoms or signs whatever, and is just an accidental radiological finding. The other sort consists of lattice-like rarefactions with expansion of the middle of the shaft of one or more phalanges often associated with lupus pernio in the overlying skin.

Other Extrathoracic Lesions

I will mention briefly some of the other extrathoracic manifestations. The *eyes* may be affected by a chronic iridocyclitis which may be a serious matter because of the mechanical difficulties which attend inflammatory changes in the eye.

Certain endocrine manifestations that have been reported, including involvement of the posterior part of the *pituitary gland*, giving rise to diabetes insipidus — a rare manifestation.

The *heart* may be involved; this is very rare in England, and I have personal experience of only one undoubted case. This was a patient who had complete heart block undoubtedly due to a sarcoid tubercle interrupting the conduction tissues of his heart. Extensive infiltration of the myocardium seems to be much commoner in North American Negroes than anyone else, so most of the information I have about this is derived from the American literature.

The *kidneys* may be involved, but most frequently as a result of hypercalcemia, to which I will refer in a moment.

Sarcoidosis may invade any tissue in the body. One patient of mine, who had had an infiltration in the lung for 10-15 years, was found to have a little nodule in her breast which was thought to be fibroadenoma; but on section it was a discrete collection of typical sarcoid tubercles.

Intrathoracic Lesions

The intrathoracic manifestations are difficult to classify, and any classification of them is bound to distort the facts to some extent. But we can recognize certain broad groups among them.

First, some cases simply have *enlarged hilar lymph nodes* which then resolve. As an example of this, I quote the case of a young student nurse. When she started nursing, she failed to react to tuberculin, and was given BCG which converted her tuberculin reaction to positive. On review a year later, her skin test had reverted to negative, and x-ray of the chest showed enlarged hilar nodes. Over the next two years, the nodes came up to enormous size, though she had no particular symptoms. The lymph nodes above the clavicles also became enlarged; one was removed for biopsy, and showed the typical pattern of sarcoidosis. Over the next year or two, the hilar and vervical lymph nodes returned gradually to normal size. During the whole of this time, she continued with her nurse's training with a little modification of her duties, finished her training and remained very well.

Another Group

The next group are those in which the hilar nodes become enlarged, and as the nodes subside a *diffuse infiltration* appears in the lungs, and may eventually resolve completely, again in many cases without important symptoms. But in some of these cases, instead of disappearing, the pulmonary infiltration goes on to a *fibrosis.* This most characteristically condenses into the middle zones of the lung, with emphysema at the bases and apices. Of course, at this stage the patient becomes breathless and the outlook is not so favorable.

Another interesting thing that may happen is that at this late stage of fibrosis, tubercle bacilli may appear in the sputum. As an example, I quote the case of a man of about 35 who in 1946 was found to have a generalized enlargement of his lymph nodes, without important symptoms otherwise. Biopsy of one of these showed a typical picture of sarcoidosis. Chest x-ray at this time showed widespread mottling in the lungs. By the time I first saw him in 1948-49, he had a typical picture of fibrosis in the middle zones of the lungs with emphysema above and below. He failed to react to 100 tuberculin units PPD, and once again we obtained typical histology to tubercle bacilli. We decided that we could not do very much for him, and sent him out from the hospital.

When I saw him 3 months later several interesting things had happened. First, he himself was complaining of a painful lump on his shin, which proved to be a cold abcess from which we aspirated pus and found tubercle bacilli. We also had a report that his sputum which had been taken at the time when he had failed entirely to react to tuberculin, had grown tubercle bacilli which were of human strain and normal virulence. The infiltration in his lungs had cleared very remarkably; and his respiratory function had improved. His skin now reacted to 10 tuberculin units, and we found tubercle bacilli at this stage even on microscopy. We treated him with antibacterial drugs in the usual way; the tubercle bacilli disappeared from the sputum, and he was left with some residual fibrosis of the lungs and a tendency to bronchitis, but no evidence of any active granulomatous condition.

Cavitation in old sarcoid lesions of the lungs presents features of great interest. Cavities are often found in old fibrotic parts of the lungs, especially in the condensed fibrous tissue in the middle zones of the lungs, or less frequently at the apices. Characteristically, the histology of these is quite featureless; their walls are formed of fibrous tissue with no specific elements of any sort.

Involvement Of The Bronchi

We have recently been interested in the involvement of the *bronchi* in sarcoidosis. At the stage of enlarged hilar lymph nodes, we now know that in a proportion of cases, although the bronchi look normal bronchoscopically, apart from distortion by the enlarged nodes, their mucosa on histology may show an infiltration with sarcoid follicles. This condition must clear up completely in most cases. How frequently it occurs we do not know, as we have not performed routine bronchoscopies in these early symptomsless cases. In the later fibrotic stages, there is another sort of bronchial involvement which must be rare, because we have looked for it in a number of patients, and found it in only a minority. This consists of stenoses of the proximal parts of the segmental bronchi and narrowing of main bronchi by the fibrotic phase of sarcoidosis.

I will quote an example of this sort. A man aged 38 had been treated without any effect in a tuberculosis sanatorium for a long time for a widespread infiltration of the lungs which had been attributed to pulmonary tuberculosis. When he was admitted to Brompton Hospital for further investigation, we found that he failed to react to 100 units of PPD. We noted also that he was breathless, and that his breathlessness was characterized by both inspiratory and expiratory stridor. We did a bronchogram which showed considerable narrowing of the whole left main bronchus, and of several of the segmental bronchi on both sides at their origins from their parent bronchi. On bronchoscopy the narrowing of these was confirmed. The mucosa did not look very abnormal, but biopsy showed considerable fibrosis in the submucosa, and an irregular infiltration with epithelioid cells and a few giant cells. The diagnosis of sarcoidosis was confirmed by other features of this patient's case. We found a few follicles in his conjunctiva which on biopsy showed characteristic sarcoid histology. He also gave a positive Kveim test.

Hypercalcemia

Another interesting feature found in a few cases of sarcoidosis is a biochemical disturbance. It consists essentially of a rise in the serum calcium which is accompanied by a normal or even high serum phosphorus and by a normal level of phosphatase in the blood. These two normal findings differentiate it sharply from hyperparathyroidism. Patients with this condition will, of course, be liable to all the dangers of a high serum calcium. The most serious of these is nephorcalcinosis; calcium salts may be deposited in the tubules of the kidney causing damage and impaired renal function. One of my patients had a serum calcium as high as 19 mg. per 100 ml., with a blood urea of 55 mg. per 100 ml., at the time when I first saw her. This condition is dramatically reversible in the early stage by cortisone. In the particular patient I have just mentioned, the administration of cortisone caused immedate return of the blood chemistry to normal.

Manifestations of hypercalcemia which I have seen in my patients include calcinosis in the soft tissues, especially the pulps of the fingers and toes, nephrocalcinosis detectable radiologically, chalky white tympanic membranes, due to desposition of calcium salts, and deposition of calcium salts in punctate fashion in the conjunctivae, causing soreness of the eyes and visible white deposits. This biochemical disturbance is a most fascinating sideline in sarcoidosis. It is important to recognize it early, because unless the nephrocalcinosis has proceeded to irreversible kidney damage the blood chemistry can be restored to normal by quite modest doses of cortisone.

ETIOLOGY

Having given a general picture of this disease, necessarily incomplete because it is a most complex disease, I will turn to the difficult question of etiology.

Several possibilities present themselves for discussion. I will dismiss suggestions that sarcoidois is related to the reticuloses or to the collagen disease, because its clinical features and general prognosis make these very improbable. The suggestions which merit closer examination are those which relate the disease in some way to some specific noxious agent or agents. These hypotheses can be divided into several variants.

Variants Of The Hypotheses

The first is that the disease is due to an as yet unknown specific agent.

The second is that it is due to a single agent of a type which we already know, but which is extremely difficult to discover in the particular group of cases, so that in them it cannot be discovered with any degree of certainty. To illustrate the contention that this is not a very fanciful idea let us consider the grounds on which we accept such things as gummata and tabes dorsalis as manifestations of syphilis. It usually is impossible to demonstrate *Treponema pallidum* in such cases, but we rely without hesitation on indirect evidence of the syphalitic origin of these and other late manifestations of syphilis. So it is not entirely a fanciful idea that sarcoidosis might be due to an agent we really know about but which happens to be extremely difficult to identify in this particular manifestation.

The third variant of the hypothesis that sarcoidosis is related to exposure to some specific agent or agents is that it represents a pattern of reaction which may occur to a number of different etiological agents. If this is true, it is of course possible that some may be known to us and some unknown. To illustrate this hypothesis, let me put before you the situation in regard to erythema nodosum. If we examine the series of cases of erythema nodosum in children in England, we would find that a considerable proportion of them were associated with primary tuberculous infections. I am told, however, that if we went to Arizona we should find that the majority of cases of erythema nodosum are caused by coccidioidomycosis. If we took a case of erythema nodosum in England due to primary tuberculous infection, and a case of erythema nodosum from Arizona due to coccidioidomycosis, we would find them entirely similar both in clinical picture and in histology of the skin lesion. Moreover, in both cases it would almost certainly be indirect evidence which led to our attributing the disease to the named specific agent. Thus we must consider the possibility that sarcoidosis similarly represents a pattern of reaction to a number of possible agents which happen to be difficult to discover in this particular condition.

The second and third variants of the infective hyphothesis, implying that sarcoidosis is due to a known agent or to several agents known and unknown which happen to be difficult to identify in this particular manifestation of their action, imply that the reason why a patient develops sarcoidosis is to be found in his own peculiar reaction to the infection. In fact, we do find that there are remarkable features in the reactions of patients with sarcoidosis to agents of the sort which can cause tuberculin type reactions. They react far less intensely than the general population to tuberculin; they react far less intensely to various other antigens giving similar type reactiones, such as mumps antigen and an antigen prepared from *Candida albicans*, in which we have been specially interested. An antigen from this ubiquitous fungus gives brisk reactions in 90% of our general population and in only 40% of patients with sarcoidosis.

My own view on etiology is on the general lines of the third variant. I think that sarcoidosis represents a reaction of an unusual type conditioned by something unusual in the subject himself to one or more agents which clearly are difficult to identify in the individual case. I go beyond this to a conviction that in some of the cases I see in England the tubercle bacillus can be identified as the agent. In 23 of 199 patients whom I had investigated up to about 1 year ago, we isolated tubercle bacilli at one time or another. In three of these the tubercle bacilli had been isolated before the specific manifestations of sarcoidosis appeared. In three the tubercle bacilli appeared during the course of sarcoidosis, with a change in the type of disease to one resembling ordinary caseating tuberculosis. But in 17 they were just discovered at various stages of the evolution of sarcoidosis, which did not change at all, the course of the disease remaining recognizably like that of other patients with sarcoidosis.

As Related To Tuberculosis

Evidence derived from my cases which relates the condition to tuberculosis is that I have not only observed the change from sarcoidosis to ordinary caseating tuberculosis, but also from caseating tuberculosis to sarcoidosis, and even, in a few cases, a double change. In these cases, the patients started with a picture of pulmonary tuberculosis, with bacilli found quite easily, and a positive reaction to tubercuiln; then the reaction to tuberculin disappeared and the disease assumed the character of sarcoidosis; and later the reaction to tuberculin reappeared, and the disease again assumed the character of ordinary caseating tuberculosis. It seems to me that the simplest way to explain that sort of thing is that something happens to the reaction of the subject to the tubercle bacillus which determines this change in character of disease, rather than that there was some curious battle going on between the tubercle bacillus and some unidentified agent in which first the tubercle bacillus was knocked out, and then the tubercle bacillus came up for the second round and knocked out the unknown agent. I don't believe that; it seems to me more likely that something odd happened in the immune mechanisms of the patients.

Similar Features

Another bit of evidence which requires more detailed consideration than we can give it now is the lack of any clear delimitation between sarcoidosis and some unusual types of case which must be placed in the category of tuberculosis with low tuberculin sensitivity. There is certainly a group of patients with pulmonary tuberculosis who fail to react to tuberculin although tubercle bacilli can be found in their sputum without great difficulty. In such a case, my diagnosis is indolent tuberculosis with low tuberculin sensitivity. These very indolent sorts of tuberculosis which fail to react to tuberculin tend also to respond very slowly to antibacterial drugs. I have had experience of one patient in whom the diagnosis of chronic miliary tuberculosis was undoubted, but who failed to react to antibacterial drugs until cortisone was given as well. Thus, there exist cases of tuberculosis which have many of the features of sarcoidosis. These exceptional cases which are established as due to the tubercle bacillus and in which there are some of the odd phenomena associated with sarcoidosis are clearly of very great significance in relation to the hypothesis that sarcoidosis may represent an unusual reaction to a common infection.

My general view in regard to etiology may be summarized thus:— first, we must adopt a purely descriptive definition which leaves the way open for some independent statement about the etiology of individual cases. Second, with such a definition, I can say with confidence that of the cases of sarcoidosis in England, a small number can be demonstrated beyond doubt to be due to tuberculosis. Third, indirect evidence leads me to the opinion that the *majority* of cases I see in England are probably related to tuberculosis. Fourth, I keep an open mind about whether there may not be some other agents active in England which can be associated with sarcoidosis, though I have no evidence one way or another about this; and I obviously have to keep an even more open mind about whether in other parts of the world, the peculiar tissue reaction which characterizes sarcoidosis may be caused more commonly by some other agent than by the tubercle bacillus.

PROGNOSIS

Before I close I shall refer very briefly to prognosis and treatment.

I shall discuss the prognosis only in relation to the lung lesions; the prognosis in relation to the other lesions would take too long to discuss, and it is outside my personal sphere of interest, although I do have some views on it. I shall base my observations on 159 cases which I have followed personally and observed for more than 2 years.

The first important point about prognosis is that a lot depends on the stage of the disease. At the stage of enlarged hilar lymph nodes only, the prognosis is excellent. Of 45 patients who had only enlarged hilar lymph nodes when I first saw them, 42 at the end of 2 years or longer were quite well with normal x-rays, and only 3 had an abnormal x-ray.

At the next stage of enlarged lymph nodes with infiltration of the lungs, the prognosis is still good but not quite so good, because of 26 who were at this stage when I first saw them, 16 were well with normal x-rays at the end of an observation period of 2 years or more, 6 had abnormal x-rays but no symptoms, 3 had abnormal x-rays and mild symptoms and 1 had died of another cause not related to the sarcoidosis.

Of 31 who at the beginning of observation had pulmonary infiltration without the enlarged lymph nodes, 18 were well with a normal x-ray; of the 12 who still had abnormal x-rays, 4 were without symptoms, 5 had mild symptoms, and 3 had severe symptoms; and 1 had died of another cause. Of 57 whom I first saw when they already had some fibrosis of the lung, of course the prognosis was not so good. There were 4 who, although originally thought to have fibrosis at the beginning, were at the end of observation without symptoms and with diminished abnormality in the x-ray; 32 had only mild symptoms, 14 were severely incapacitated, 5 had died of sarcoidosis and 2 of other causes.

An acute onset with erythema nodosum or arthralgia suggests a very favorable prognosis, because 21 out of 23 cases with that onset were well after 2 years.

TREATMENT

When we come to the question of treatment, I have only a very few words to say, because I think that when treatment is required for the pulmonary changes in this disease, it is disappointing. The only drugs which affect the course of the disease in any way are the corticosteroids. There are special indications for the use of these in the management of the ocular lesions ,and of hypercalcemia. With these I do not propose to deal.

Corticosteroids will cause a rapid disappearance of the pulmonary manifestations of the disease in the early reversible stages, but it is clear that this is due to suppression rather than cure of the disease, for prompt relapse usually follows cessation of treatment. And of course at this stage we know the prognosis in general is good, and therefore there is no point in suppressing the evidences of the disease. Even patients with seemingly irreversible lung lesions will sometimes show remarkable partial resolution without treatment.

Of course the cynic might say that it is just as well to treat a condition that is going to improve spontaneously, because then the physician can take credit for the good result. But I don't believe in deceiving myself, so I don't treat patients whom I expect to get better spontaneously. But there is no question that in the later stages when the patient has symptoms, the administration of corticosteroids will often improve those symptoms, and it now seems to me that the only indication for giving corticosteroids is that the patient has symptoms that can be relieved by giving these drugs, and which are severe enough to warrant the risks of what may well be indefinitely prolonged administration of them.

Of patients whom I have treated with corticosteroids for symptoms due to fibrotic changes of sarcoidosis, 30 have been followed for more than 2 years. The results are not very impressive. The treatment has stopped in 15 of them; of these, 8 had made no immediate response at all, and 7 showed slight immediate improvement. Two years or more after treatment, one was considerably improved, 5 were a little better, 5 were unchanged, 2 were worse, 1 had died of sarcoidosis and 1 had died of another cause, carcinoma of the lung. In 15 the corticosteroid treatment caused some initial improvement, and is still being continued after 2 years or more in order to maintain that improvement. Of these, 5 are considerably better and 10 somewhat better; we're not very pleased with them but we think it is worth going on with the corticosteroid treatment. It is therefore clear that the results of this treatment were not very striking. I am quite sure that an expectant policy is correct in patients who have sarcoidosis affecting the lungs in a potentially reversible stage, and that the corticosteroids are to be regarded as useful only in relieving symptoms.

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An American "First" In Sweden

For the first time at Upsala University, Sweden, an American M.D.—Dr. Victor H. Frankel, of Wilmington, Delaware — has qualified for the Swedish degree of Doctor of Medicine. He publicly defended his doctoral dissertation in Sweden on April 23rd. The 35 year old American orthopedic surgeon has been working at Upsala University Hospital for the past 2 years.

Dr. Frankel went to Upsala as a Fellow of the National Foundation to work at the Biomechanical Laboratory of the Department of Orthopedics at the University. This laboratory was established by Dr. Carl Hirsch, professor of orthopedics at Upsala, who has been associated with the Alfred I. duPont Institute in Wilmington.

The work Dr. Frankel had begun at the Hospital for Joint Diseases in New York developed into a full scale research project that qualified him to complete the requirements for the Swedish degree of "Medicine Doktor." These were formally fulfilled when, before a crowded lecture hall in the University Hospital, Dr. Frankel defended his dissertation on *The Femural Neck: an experimental study of function, fracture mechanism, and internal fixation.* The prominent ortheopedic surgeon, Professor John Charnley of Manchester, England was a faculty critic. Dr. Frankel, his wife and 3 children expect to return to the United States in August.

SYMPTOMATIC ANNULAR PANCREAS IN THE ADULT[*]

● Annular pancreas is a congenital condition. Its diagnosis is important in order that proper treatment may be given.

K. P. Lee, M.D.[**]

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Annular pancreas is the encircling of the duodenum with pancreatic tissue. This usually occurs at the descending part of the duodenum, causing varying degrees of obstruction with proximal duodenal dilation. In some cases, the contracting ring does not completely encircle the duodenum. The embryological developement of this congenital anomaly was thoroughly discussed by McNaugh[10]. Most of the authors agree, that annular pancreas develops from the ventral pancreatic anlage, probably due to its failure of complete migration.

Tiedemann[17] first described this condition in 1818, and Ecken[6] gave it the name of annular pancreas in 1862. This lesion had been considered rather rare. However, in recent years, there has been an increasing number of cases recorded in the world literature. In 1954, Hope[7] collected a total of 93 cases. Approximately half of these were incidental findings at autopsy. More recently, Drey[5] reported 62 cases of symptomatic annular pancreas in adults. Since this author's report in 1957, two additional cases have appeared in the medical literature[16]. The following is an abstract of a case with the adult type of annular pancreas recently treated at the Wilmington General Hospital.

Case Report

A 44 year old Negro man, hospital cook, was seen because of profuse cold sweating and a choking feeling while at work. He had restlessness, frequent coldsweating, weakness, loss of appetite and insomnia, with a gradual loss of approximately 10 lbs. during the past several months. These symptoms were aggravated during the night.

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He was well-developed and well-nourished and in no acute distress. The pertinent positive findings were: B. P. 170/110, mild sinus tachycardia with distant first heart sound, and slight epigastric tenderness. No abdominal masses were palpable.

The electrocardiogram showed complete left bundle branch block with occasional ventricular premature beats. Laboratory studies were as follows: Hemoglobin 15.7gm., hematocrit 49% WBC 8,400 with normal differential, sedimentation rate 34, SGOT 20, negative urinalysis and negative stool for occult blood.

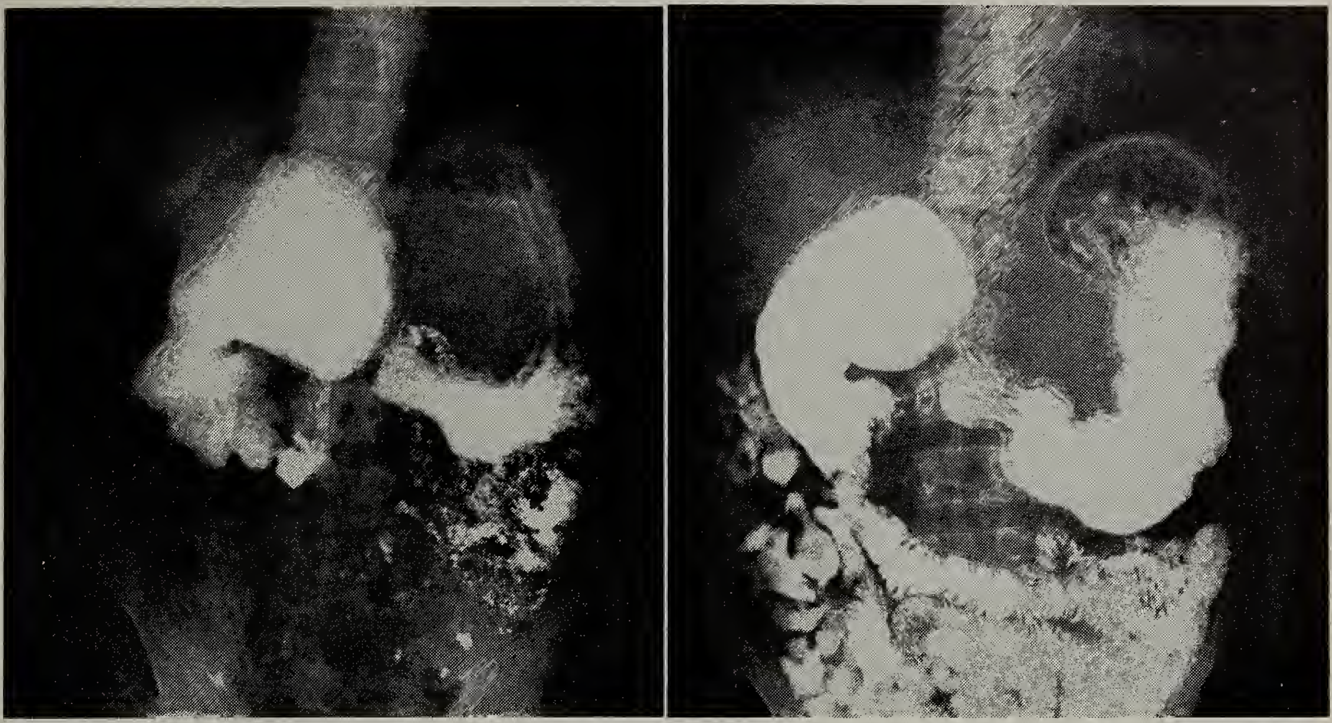
Because of the left bundle branch block, attention was first focused on possible cardiac disease. However, these findings were not compatible with acute heart disease. Further questionings revealed that the patient had peri-umbilical cramp-like pain and intermittent indigestion. These symptoms were aggravated by food intake, and had been present for many years. He had, in the past, been treated for peptic ulcer disease without any benefit. Cramps had increased in severity and frequency, radiated to the back, and were often associated with post cibal vomiting. There was no diarrhea or constipation.

An upper G. I. series was done. Fluoroscopically the esophagus and swallowing function was normal. A large air and fluid level was seen in the right upper quadrant which was eventually identified as duodenal cap. The stomach was normal in size and position and peristalsis was active. As barium left the stomach it filled a large dilated duodenal cap and second portion of the duodenum. At approximately the junction of the second and third portions of the duodenum there was an abrupt narrowing of the lumen. Radiographically, the appearance suggested an intrinsic lesion such as a neoplasm, but the possibility of an extrinsic lesion producing these changes was also considered in the differential diagnosis (See Figure I). The distal third portion of the duodenum and remaining small bowel were normal.

Surgical Treatment

Surgical consultation was requested. Because of the presence of an obstructing duodenal lesion, surgical exploration was suggested. Prior to the surgical procedure, the patient's fluid and electrolyte balance was within normal range. A Levine tube was placed in the stomach for thirty-six hours in an atempt to decompress the markedly dilated duodenum.

The peritoneal cavity was entered through a midline supra-umbilical incision. Pertinent findings were limited to the supra-colic area. The stomach was not markedly distended, however, there was thickening and edema of the gastric wall. The duodenum was markedly dilated. The wall was thin and pliable. The duodenal cap as well as the descending portion of the duodenum measured 10 cm. in diameter. Following exposure of the pancreas, the transverse and fourth portions of the duodenum, it was found that the pancreas was of normal size and consistency. The third and fourth portions of the duodenum were of normal caliber, and the wall was not thickened. At the junction of the second and third portions, there was a tongue-like piece of pancreatic tissue which encircled the anterior wall and measured 4 x 6cm. On palpating the duodenum under the annulus, there did not appear to be an intraluminal obstructing lesion. Furthermore, one could not palpate an intraluminal lesion in the first or second portions of the duodenum. In order to rule out a concomittent mucosal lesion, a duodenotomy was performed through the anterior wall of the descending portion. A sterile sigmoidoscope was introduced, and visualization of the third and fourth portions of the duodenum failed to demonstrate a mucosal lesion. On introducing the examining finger into the duodenotomy, one could feel a band-like constriction at the junction of the second and third portions at the point where the pancreas encircled the anterior duodenal wall. These findings were consistent with the diagnosis of annular pancreas. A loop of jejunum



approximately 14 cm. distal to the ligament of Treitz was anastomosed side to side with the descending portion of the duodenum thus by-passing the obstruction secondary to the annular pancreas. Prior to abdominal closure, a #16 Levine tube was placed in the mid-portion of the body of the anterior wall of the stomach by utilizing the Stamm Gastrotomy Technique. This tube was then brought through the left upper abdomen by means of a stab wound. This gastrotomy tube was utilized for gastro-intestinal tract decompression and obviated undesirable respiratory and paryngeal complication sometimes secondary to naso-gastric decompression.

On the second post-operative day, the patient had an elevated temperature, chest pain and hemoptysis. A chest x-ray showed changes compatible with a pulmonary infarct. Heparin therapy was instituted and continued for two weeks. The patient was discharged asymptomatic on the 18th post-operative day. One month later, an upper G.I. Series was repeated and showed the esophagus and stomach to be normal. An air and fluid level was again identified in the right upper quadrant. The duodenal cap and second portion of the duodenum were still markedly dilated and the appearance was the same as the pre-operative study. The area of obstruction seen on the prior examination was not visualized. Barium entered both the afferant and efferant loops through the stoma indicating a functioning duodeno-jejunostomy. (See Figure 2)

One month after surgery, repeat ECG showed an identical pattern, with a persisting left bundle branch block. The patient had gained 15 pounds and did not manifest any gastro-intestinal symptoms.

Incidence In Both Children And Adults

Annular pancreas occurs in both adults and children. This congenital anomaly may be asymptomatic. Of Hope's 93 cases,[8] 55 were symptomatic and treated surgically; of these, 27 cases occured in children. The incidence in males is approximately twice that in females, and the ages ranged from 2 days to 74 years. McNaught[10] reported that 20% of his cases were associated with other forms of congenital abnormalities. Symptoms occur most frequently in the middle aged adult and are secondary to varying degrees of high intestinal obstruction. Inciting causes may be hemorrhage, pancreatitis, tumor, hypertrophy, etc. Crampy abdominal pains aggravated by the ingestion of food is frequent. This predisposed to epigastric fullness, nausea and vomiting. Anorexia and weight loss are often present. In Drey's series, the most common complications were peptic ulcer disease and pancreatitis. Lehman[8] stresses that a common factor producing symptoms in the adult type is pancreatitis.

Drey stated that the important symptoms were aggravation of nocturnal pain and vomiting. He also emphasized, that even though symptoms in the average patient were present for 5 years, their nutritional status was good.

Diagnosis of this condition, however, with clinical data alone is impossible. Even with the upper G.I. Series, which is the single, most valuable study, it is most frequently confused with neoplasm or post-bulbar ulcer. In Drey's[5] series, diagnosis was suggested pre-operatively by x-ray findings in only 14 out of 50 cases (22%)

The following x-ray findings are suggestive of this condition:

1. An extrinsic-type defect in the descending portion of the duodenum with evidence of partial obstruction.
2. Effacement of mucosal pattern and absence of peristalsis.
3. Rather marked distention of the duodenal cap.
4. Medial displacement of the duodenum.
5. Unchanging character and size of the duodenal lumen with repeated examination.
6. Incomplete obstruction.

The treatment of this condition is surgical with two possible approaches:

1. Direct attack on the annulus.
2. Indirect by-passing procedure by gastro-jejunostomy or duodeno-jejunostomy.

Most surgeons feel the by-passing method is the operation of choice. The direct method has frequently been followed by complications. A pancreatic or duodenal fistula may occur as well as pancreatitis. With the by-pass procedure, a good result was achieved in 85-90%. Further discussion of the treatment is beyond the scope of this paper. Readers are referred to the excellent articles by Lehman,[8] Sanford,[14] Wilson,[16] Gillette,[6] and Drey.[5]

SUMMARY

The literature on annular pancreas has been reviewed and a new case added. Since Drey's[5] paper (1957), Taylor[16] has reported two additional cases of symptomatic annular pancreas in adults. Although it is a rare congenital anomaly, an increased incidence has been reported in the medical literature in recent years. Diagnosis is entirely dependent on radiological findings and one should keep in mind the possibility of this condition when partial obstruction of the descending portion of the duodenum is encountered. Drey emphasized nocturnal aggravation of the abdominal cramps and vomiting. These symptoms were present in our case. The most frequent complications are pancreatitis and peptic ulcer disease. The treatment of choice is a surgical by-passing procedure.

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● . The differential diagnosis of poliomyelitis from disease caused by the Coxsackie viruses is frequently impossible without definitive studies obtained in a virus laboratory.

DIAGNOSIS OF VIRAL DISEASES IN A GENERAL HOSPITAL

10 Case Reports

Ertugrul Tekisalp, M.D.*

At the present time we see a large number of respiratory, enteric, and central nervous system infections caused by viruses. An etiologic diagnosis of these conditions is essential for the proper treatment of the patient, as well as for taking precautionary measures in protecting the contacts by available vaccination procedures and for providing information to the health department concerning the prevalence of disease.

The Coxsackie viruses which may cause herpangina and epidemic pleurodynia can also produce a syndrome clinically indistinguishable from non-paralytic or mildly paralytic poliomyelitis. These cannot be differentiated on a clinical basis alone and only a virus diagnostic laboratory can assist us. It can also assist us in eliminating the diagnosis of "febrile infection of unknown etiology" in obscure conditions.

The availability of the services of a local virus laboratory recently established in Wilmington has given the staff and resident physicians of the Wilmington General Hospital another important diagnostic modality. The training we receive in viral disease is of inestimable value by making us more alert in suspecting these infections and in learning what specimens are needed to carry out the various tissue culture and serological studies. We also acquire more confidence in our efforts toward viral diagnoses when we know a virologist is available for consultation.

The following case reports are a representative group of patients. A brief history, the admitting diagnosis, and the viral diagnostic reports are given.

Case 1.

A 5½ year old white boy was admitted on 8-29-59 with complaints of fever of five days duration. Other symptoms were headache, stiffness of the back, and weakness of the neck flexor group of muscles. The spinal fluid revealed 75 cells of which 20%

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were polymorphonuclear neutrophiles, and 80% were lymphocytes; total protein was 33 mgs.; globulin 2 plus and the colloidal gold curve was negative. The admitting diagnosis was mild paralytic poliomyelitis. Viral studies reported that Coxsackie virus was isolated in tissue cultures and suckling mice from throat swabs, stool, and spinal fluid.

Case 2.

An 11 year old white girl, admitted 8-27-59 with fever. There was an ulceration on the tongue and a whitish membrane on the bucchal membrane. There was marked lymphodenopathy on the right side of the neck. Clinical diagnosis was acute herpetic gingivostomatitis. Viral reports — Coxsackie-like virus isolated in tissue culture and in suckling mice.

Case 3.

A woman, 21 years old, admitted on 8-26-59 with complaints of headache, drowsiness, malaise, and rigidity of the neck. There was no muscle weakness, muscle atrophy, or any limitation of muscle movements. The admission spinal fluid showed 38 leukocytes with lymphocytes predominating. There was a slight increase in the total protein and the globulin was plus 1. A repeat spinal puncture one day after admission revealed only two white blood cells with normal protein and negative colloidal gold. Viral studies resulted in the isolation of Coxsackie virus in tissue cultures and in suckling mice.

Case 4.

A 10 year old white boy, admitted on 8-25-59 with fever, malaise, slight puffiness of the eyelids, and marked stiffness of the neck, back and hamstrings. There was no muscle weakness. The spinal fluid showed no cellular increase, negative Pandy, and a total protein of 20 mgs. General condition improved rapidly except for the tightness in the low back and hamstrings. The clinical diagnosis was Coxsackie virus. Viral studies revealed Poliomyelitis Type III, and negative for Coxsackie viruses.

Case 5.

A white boy, aged four years, admitted 8-18-59 with the complaints of fever, nausea, vomiting, and tightness of the neck and back. There was a bilateral positive Kernig sign. The spinal fluid was free of any cells, total protein was 28 mgs and the globulin was negative. Clinical diagnosis was non-paralytic poliomyelitis. The virologist isolated a Coxsackie-like virus in tissue cultures and in suckling mice.

Case 6.

A 15 year old Negro boy was admitted 7-29-59 with the complaints of fever, headache, and stiffness of the neck and back. He was ill at home for two days before admission with pharyngitis and malaise. The spinal fluid was normal. A coxsakie virus infection was the admitting diagnosis. Patient recovered rapidly and was discharged in four days. Viral studies confirmed the diagnosis through the isolation of Coxsackie virus in tissue culture and suckling mice.

Case 7.

A 28 year old Negro woman was admitted on 7-30-59. The chief complaints were marked weakness of both lower extremities and both hands and had some weakness in swallowing. Deep tendon reflexes were strongly positive, positive ankle clonus, and positive Babinski on the left side. The spinal fluid findings were normal. Muscle and skin biopsies were reported as dermatomyositis. There was apparent muscle twitching on the muscle of the arm but no localized muscle paralysis. The provisional diagnosis was Amytrophic lateral sclerosis or a viral infection. Viral studies of throat swabs, stool, spinal fluid and blood were negative for the three types of poliomyelitis but a Coxsackie virus was isolated in tissue cultures and suckling mice.

Case 8

A white boy, aged 8 years, admitted on 7-13-59 with complaints of sudden onset of fever, headache, malaise, pain in the right leg which caused him to limp, and stiffness of the neck and back. He was unable to bend his body forward when his legs were extended. Kernig sign was positive in the right leg. Spinal fluid revealed 6 lymphocytes, negative globulin, and 24.3 mgs. of total protein. Even though this child had received the usual three Salk injections the diagnosis made was paralytic poliomyelitis. The virus laboratory reported Polio Type I was isolated in tissue cultures and verified by neutralization tests.

Case 9.

A 64 year old white man was admitted on 7-6-59 complaining of weakness of his legs and hands for four days prior to admission. Both arms and legs were weak but his feet appeared to be totally paralyzed. Several spinal fluid examinations were performed with the following results:- 7-6-59, 8 white blood cells; globulin was negative; total protein 41 mgs.; sugar 76 mgs.; and chlorides 119 milliequivalents. 7-8-59, 8 white blood cells; total protein 33 mgs.; 7-13-59 a repeat lumbar puncture showed a total protein of 39 mgs.; sugar 79 mgs., and chlorides 120.2 milliequivalents. Another spinal fluid examination on 7-29-59 disclosed 1 white blood cell, a total protein of 39 mgs., and sugar 69 mgs. The clinical diagnosis made was Guillain Barre Syndrome until the virus studies were completed which showed Coxsackie virus isolation.

Case 10

A 2½ year old white girl was admitted on 6-22-59 with fever, marked rigidity of the neck, back, hamstrings, and calf muscles. There was marked weakness of both lower extremities, as well as flaccidity of all their muscles. Abdominal reflexes and deep reflexes of both lower extremities were absent. The spinal fluid examination revealed a pressure of 250 mm of water, 5 lymphocytes, 59 mgs. of total protein, and four plus globulin. The child did not have any Salk inoculations. The diagnosis of paralytic poliomyelitis was made. Poliomyelitis Type I was isolated from throat swab, stool and spinal fluid and was confirmed by neutralization tests.

CONCLUSIONS

Viral studies are a valuable aid in general hospital practice.

Case No.	Admitting Diagnosis	Virological Diagnosis
1.	Paralytic Poliomyelitis	Coxsackie
2.	Herpetic Gingivostomatitis	Coxsackie
3.	Aseptic Meningitis	Coxsackie
4.	Coxsackie	Poliomyelitis III
5.	Non-paralytic Poliomyelitis	Coxsackie
6.	Coxsackie	Coxsackie
7.	Amytrophic Lateral Sclerosis	Coxsackie
8.	Paralytic Poliomyelitis	Poliomyelitis I
9.	Guillain Barre	Coxsackie
10.	Paralytic Poliomyelitis	Poliomyelitis I

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Hobbies — Yours

Information from all members of the Medical Society of Delaware regarding hobbies they indulge in would be appreciated by the editors. It will introduce a subject interesting to readers — and also set an example for our patients. Think about it and contribute your information to the editoral office.

● **In acne, a condition that is stubborn and resistant to many forms of treatment, no small detail that might possibly be of benefit to the patient should be overlooked.**

HALOGENS IN ACNE

Elmer R. Gross, M.D.*

Acne vulgaris[1] is still a prime dermatologic problem, since it not only affects teen-agers, but many adults are plagued with it.

The psychic trauma produced by acne scars is an accepted fact, therefore the fundamentals of management can not be taken too lightly, nor can the therapeutic approach be overemphasized.

This group of patients should be cautioned about their intake of halogens. Of the halogen group, dermatologists have been cognizant of bromine and iodine allergies and intoxications for many years. The pharmacologist is aware that halogenation enhances the physiologic activity of chemotherapeutic agents.

The halogens have long been recognized as acnegenic agents; their role in activating or precipitating a pre-existing acne is a dermatologic acceptance. Nevertheless, many physicians today are overlooking the fact that their patients may be absorbing one or more of the halogens from readily available sources.

Iodides are a particularly prevalent halogen, often found both in the multi-vitamin tablet containing minerals, as reported recently in the Schoch Letter,** and in a high potency vitamin milk preparation now on the market. It has become routine practice for many dermatologists to curtail the use of iodized salt in the regimen they advise for acne patients, except for those living in the "goiter belt." Shellfish also are notoriously rich in iodides.

Patients beyond adolescence with acneiform lesions should be questioned in detail about their intake of halogens in the form of food, vitamins and drugs particularly in this day of "tranquility" bromides, which as nerve tonics are purchased by patients in the open market. Many are habitual users of "bromos" which are readily dispensed over drug and soda fountain counters. In fact, "Give me a bromo" is common nowadays at drug store fountains.

Fluoride, of the halogen group, bears a close chemical relationship to bromine and iodine; therefore, it should be expected that fluorine would aggravate acne. Prior to the fluoridation of our local water supply many dentists advocated and used fluorides both in tablets and local application for a number of their patients. Fluoride levels are high in tea and sea foods as well as in some drinking water supplies.

I have observed a group of twelve patients with mild acne who have taken fluorides over a period of time; there has been no increase in comedo-papulo pustular lesion activity in this number. This conclusion would seem to bear out Epstein's findings[2] wherein there was no activation of acne following the ingestion of fluoride tablets experimentally. However, we should not close our eyes to the possibility that fluorides may be another "don't" in our instructions to acne patients.

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***Current News in Dermatology,* Arthur Schoch, M.D., Editor.

PAIN IN ACUTE POLIOMYELITIS

CONTROL WITH PROTAMIDE

● Pain at the onset of the disease is one of of the cardinal symptoms of poliomyelitis. Protamide has given excellent relief of this pain in a significant number of patients.

George J. Boines, M.D.*

Pain is one of the cardinal symptoms in poliomyelitis. It affects the patient most profoundly at the onset of the disease therefore, it is mandatory to relieve pain and make him comfortable in the early stages of the management of poliomyelitis.[1,2]

There are several possible mechanisms which may be responsible for pain.[3] These are, inflammatory reactions involving the posterior roots of the spinal cord, dorsal ganglion or the meninges;[4] secondary inflammation of various components of the sympathetic system; hyperactivity of the sympathetic nervous system which evokes vasoconstriction leading to muscle ischemia and pain,[5] the production of abnormal metabolites in the affected muscle group[6] and the reflex pain arising from spasm of a muscle group itself.[7]

Analgesics are routinely employed to relieve nerve root pain although their therapeutic effect is temporary and often partial relief is obtained. Hot packs have been used in the past for relaxing muscle spasm and relieving pain but with minimal benefit. Muscle relaxant drugs have not been found beneficial. Morphine and other narcotic drugs are not used because of their depressing effect on respiration and aggravation of possible bulbar symptoms. Narcotics are never used in bulbar cases with respiratory difficulty, especially those who are in any type of respirator.

Sedation in patients with respiratory involvement should be selected carefully. Mild sedatives such as barbiturates will suffice for giving the patient rest. However, because of their extreme apprehension, personal reassurance by the attending physician and an experienced nurse constantly in attendance are superior to sedatives in keeping these patients emotionally relaxed.

Protamide has been successfully used in the treatment of neuritis[8] and spinal nerve root pain of various etiologies[9] including Herpes Zoster.[10,11] In these conditions the drug was found to be without untoward effects and the relief obtained was fast, complete and lasting.

The present report describes our experience with Protamide in acute poliomyelitis.

Method And Material

Therapeutic effectiveness of Protamide was investigated in thirty-three hospitalized cases of acute polimyelitis. Included in this study were sixteen paralytic, ten nonparalytic and seven respiratory paralytic cases. Diagnosis was established on the basis of clinical symptoms and laboratory findings. Each case was classified as either moderate or severe, depending on severity of clinical symptoms.

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Protamide therapy was employed as an adjunct to the therapeutic regimen routinely used in our patients for the management of acute poliomyelitis.[2] One ampul (1.3 ml) was administered intramuscularly every four hours as necessary and was continued for three to six days or until pain was relieved.

Aspirin was administered for milder complaints such as headache. Hot packs were rarely employed.

Discussion of Results

As far as relief from pain is concerned most encouraging results were seen in twenty-eight (84%) cases. The following Table summarizes the data.

In the non-paralytic group six cases were severe and four moderate while five of the sixteen paralytic cases were moderate and eleven severe. All these patients obtained good to excellent results. Of the seven respiratory paralytic cases the beneficial effect was equivocal in five while good relief was obtained in two.

The action of the drug is not clear. It may counteract the edema present in the cord or nerve trunks by some enzyme action, or it may reduce the outflow of serum and cellular elements through the damaged capillaries which produce perivascular infiltration.

It is our impression that Protamide is safe and an effective adjunct in the therapeutic regimen in the early stages of poliomyelitis management. It has given us superior clinical results, as evidenced by immediate and prolonged relief from pain.

Summary

Protamide, a modified proteolytic enzyme, has been investigated in 33 cases of acute poliomyelitis for its therapeutic efficacy to control pain. The drug (1.3 ml) was administered intramuscularly every 4 hours as necessary and was continued for three to six days or until complete relief was obtained.

Good to excellent results were obtained in twenty-eight (84%) patients and no untoward effects were noted in any patient regardless of the extent of involvement of the spinal or bulbar areas.

Theories of the mechanism of pain are discussed. Although the exact mechanism of the action of the drug is not clear, relieving the inflammatory edema of the nerve trunks is a strong possibility.

TABLE

Relief of Pain in Response to Protamide Therapy

Diagnosis	*Number of Patients*	*GRADE OF SEVERITY*		*RELIEF FROM PAIN*		
		Moderate	*Severe*	*Excellent*	*Good*	*Poor*
Non-Paralytic	10	4	6	8	2	..
Paralytic	16	5	11	9	7	..
Respiratory Paralytic	7	..	7	..	2	5
TOTAL	33	9	24	17	11	5

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● Leptospirosis should always be suspected when a patient with an acute febrile illness has hepatic, renal, and central nervous system involvement.

LEPTOSPIROSIS

Ertugrul Tekisalp, M.D.*
James P. Walsh, M.D.**

Leptospirosis was first recognized as a clinical entity in 1883 when Landouzy[5] described two cases among Paris sewer workers. In 1886, Weil observed several human cases with jaundice, fever and hemorrhagic tendency accompanied by signs of hepatic and renal failure with a high fatality. Years later in 1915, Inada identified the causative microbe as a spirochete which was subsequently named a Leptospira by Noguchi.[2]

American And World Incidence

In the United States less than 500 cases have been reported since 1922. By 1951, only 13 cases of Leptospira canicola infection had been reported in this country since Meyer's description of this disease in 1938. Human infection due to Leptospira pomona and Leptospira autumnalis has only been recognized since 1948. Recently, sporadic cases of Leptospirosis due to Leptospira grippotyphosa, Leptospira bataviae, Leptospira australia, and Leptospira hebdomadis have been reported.[2]

In 1939, there appeared a review from the Netherlands in which 374 cases were exhaustively studied.[3] The number reported in England, France and Germany, runs well over a thousand.[4] It has been found to be relatively common in Denmark, Austria, Egypt and parts of South America. It has been described and treated by Japanese observers in the Philippines more frequently than in the United States.[1]

Epidemiologic Aspects

Leptospirosis is a disease of lower animals, the most important of which belong to the Rodent family. The transmission from lower animal reservoirs is most frequently accomplished through the medium of water contaminated by the urine of these animals. Although direct contact with infected tissues, as in the case of Veterinarians and slaughterhouse workers may result in infection of man. The known lower animal hosts and reservoirs of Leptospiral serotypes in the United States are dogs, cats, rats, mice, oppossums, cattle, swine, horses and foxes.[1] The causative organism will live for a period longer than three weeks in stagnant water which is neutral or slightly alkaline. In the Netherlands, it has been shown that 91 percent result from those whose occupations necessitate the frequent handling of rats.[3] It has been shown that water infected with the excreta of spirochete carrying rats, may infect man either through abrasions on the skin,[6] through the gastrointestinal tract,[7] through the nasal mucous membrane or through the mucous membrane of the ocular conjunctiva.

Clinical Futures Of The Disease

Leptospirosis usually begins abruptly after an incubation period of 3 to 9 days. The onset of the disease is so sudden that the patients can name the hour at which they became ill. Characteristically, there

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is an abrupt onset of severe headache, usually frontal, but occasionally bitemporal or occipital often associated with chilly sensations and severe prostration. Muscular aching, especially of the muscles of the calves of the legs is prominent. Headache is generally present in Leptospiral infections and in 50 ercent of the patients, it is accompanied by retrobulbar pain. Frequently nausea and vomiting are persistent and severe. Abdominal pain may be outstanding and the condition may be difficult to distinguish from an acute surgical abdomen. One of our cases (No. 1) had very severe pain in the right upper quadrant which was originally thought to be due to acute cholecystitis. Cough and hiccough are common and frequently associated with productive sputum which may be bloody, suggesting pneumonia, and this may actually be present. One of our cases (No. 1) had bilateral pulmonary infiltration. The temperature range is usually between 102 to 106° F. The patient appears acutely and seriously ill, herpes is unusual and when present, is usually hemorrhagic. Examination of the urine will frequently reveal albuminuria and casts during the acute phase of the disease. When the infection is severe, as evidenced by jaundice and renal insufficiency, the illness is usually called Weil's Disease. The febrile phase usually ends in a week. Hematemesis and hemoptysis are the most common hemorrhagic manifestations of Leptospirosis followed in frequency by conjunctival hemorrhage, epistaxis, petechia in the skin, and melena. Case No. 1 presented conjunctival hemorrhages and petechiae. Lymphadenopathy occurs in about 40 percent of patients but splenomegaly is rare. Although nuchal rigidity may appear in 30 to 40 precent, the overall incidence of actual meningeal involvement in Leptospiral infection is not known but is at least 50%.[9,10] The French[8] describe true opisthotonis, but this symptom is rare. When jaundice is present, it usually appears toward the end of the first week as the fever is subsiding. Those with marked liver involvement show evidence of progressive hepatic dysfunction, and recovery may not become evident until the end of the second or third week of disease. Renal decompensation is also a part of the severe infection as evidenced by anuria, azotemia and a lower nephron syndrome.

Fatalities in Leptospirosis are almost always ascribable to renal failure with hepatic insufficiency although peripheral vascular collapse and hemorrhagic deaths are seen. Leucocytosis is present from the onset and is usually between 14,000 and 20,000 with a marked increase in young polymorphnuclear leucocytes. Platelets and prothrombin time are normal even though the hemorrhagic tendency is prominent.

Laboratory Diagnosis Of Leptospiral Infection

Laboratory diagnosis of Leptospirosis may be made by microscopic demonstration of the organism in tissues or body fluids, by recovery of the organisms in culture or in laboratory animals, and by serological demonstration of rises in Leptospiral antibody levels. Leptospirae are present in the blood and may also be present in the cerebrospinal fluid during the initial febrile stage of illness. Their disappearance from the blood is associated with remission of fever and the appearance of specific antibodies. The Leptospiremic phase is usually limited to the first week of illness. Complement — fixing antibodies are usually first detectable at the tenth day of disease, while agglutinating antibodies generally first reach significant levels at the twelfth day. Direct microscopic examination of body fluids by dark field illumination offers the theoretical advantage of the most rapid diagnosis of Leptospirosis. In practice, there is difficulty in demonstrating Leptospirae and often falsely negative reports occur. Therefore, the isolation of the organism often depends on inoculation of susceptible laboratory animals such as the hamster and demonstration of the organism in the blood or peritoneal fluid of the animal either by dark field examination or culture in artificial media. Leptospirae grow relatively slowly in any of the artifical media. In most instances, the organisms cultured cannot be demonstrated by dark field examination prior to the fourteenth to twenty-first day of incubation at 32°c. The most widely employed serological methods for diagnosis of Leptospirosis have been the agglutination and the agglutination — Lysis tests.

Treatment

The effect of antibiotics on Leptospires in vitro as well as Leptospiral infection in laboratory animals has been studied by several investigators. Penicillin, streptomycin and tetracyclines have been shown to protect experimentally infected guinea pigs and hamsters. There is general agreement that chloramphenicol is not particularly effective against Leptospirae in vitro and that it is ineffective in experimental infections of laboratory animals. Doherty[5] is a retrospective study of 273 cases of Leptospirosis was able to demonstrate a reduction in the mean duration of fever among penicillin treated patients. The use of 4 to 6 million units of penicillin daily is probably indicated in a Leptospiral infecton of more than average severity.

Case History No. I

A 22 year old white man was admitted to the Wilmington General Hospital on September 16, 1959, complaining of very severe pain in the right upper abdomen and across the epigastrium of 4 days duration. His illness began abruptly 4 days before admission. He experienced a shaking chill followed by nausea, vomiting, fever and headache. He was treated by his physician at this time with a penicillin injection. Most of his symptoms persisted.

Past History

He gave a history of swimming in the Christiana River many times during the past summer. Rats were prevalent in the area. Physical examination on admission revealed a moderately ill, lethargic man. The temperature was 98.5°, pulse 80, respiration 20 and BP 130/86. Physical examination was completely negative except for marked tenderness in right upper quadrant. The admission blood count showed 15,950 white blood cells per cubic millimeter, with 90% segs., 10% lymphocytes. The urine showed 1+ Albumin, 3-4 WBC, rare finely granular casts. Thymol turbidity 2.5 units, cephalin flocculation +3, transaminase 24 units, amylase 38 units, Alkaline phosphatase 3.6, VandenBerg direct 0.12 mg.%, indirect 0.31%, total 0.43%.

The morning after admission, the temperature spiked to 102.4 and in the afternoon to 101.8. A repeat WBC was 18,300 per cubic millimeter with 2% stab., 90% segs., 8% lymphocytes, hemoglobin 78%, hematocrit 39%, sed. rate was 34 mm/hr. Three days later he became more acutely ill and experienced nuchal rigidity. Vomiting had persisted as had some abdominal pain and right upper quadrant tenderness. He coughed up blood tinged sputum, petechial hemorrhages were noted in the right bulbar conjunctiva and the anterior chest wall. The skin and conjunctiva became slightly icteric. Spinal tap was performed with an opening pressure of 345 mm H_{20}. The fluid was slightly cloudy, it contained 398 WBC with 54% polys and 46% lymphs., protein 38%, globulin negative, gold curve normal. Spinal fluid smear was negative for organisms and AFB.

Two routine sputum cultures were negative for pathogenic bacteria. Repeat urinalysis revealed negative albumin, WBC 15-20, hyaline and WBC casts, VandenBerg was direct 4.6%, indirect 2.2 mg.%, total 6.8 mg.%, BUN was 21 mgm.%. Agglutination tests for typhoid and paratyphoid were negative. Repeat thymol turbidity was 6 units. Cephalin flocculation was 4+. Blood count revealed WBC 12,350 with 5 stab., 59 segs., 36 lymphs., Hb. 56% (8.4 gms.), Hct. 32%, RBC 2,830,000. Platelets 84,000. Two blood cultures and two stool cultures were negative. Chest x-ray on admission was normal except for prominence of the hilar shadows. Chest x-ray on the 3rd day after admission revealed in addition to the prominence of the hilar shadows, a rather diffuse infiltration throughout both lung fields, particularly both lower lobes. He was treated with combination of aqueous penicillin 4,000,000 U. in 1,000 cc G/W, q8H, Streptomycin 0.5 Gm., IM every 12 hours, isonicotinic acid hydrazide 100 mgs. TID, chloromycetin, 100 mgs. IM q6H. The temperature became normal on the following day. The spinal tap was repeated which was entirely normal. Spinal fluid cultures were again negative. All medications were gradually reduced. He recovered rapidly in the next few days and was discharged on the 17th day after admission, completely asymptomatic. All etiologic studies were negative at the time of discharge, but follow up studies revealed that his Leptospiral agglutinations were: October 1, 1959, Leptospira Canicola 1:100; November 19, 1959, Leptospira Canicola 1:200 and Leptospira Ictero 1:400. These agglutination tests were performed by the Communicable Disease Center, Laboratory Branch, Chamblee, Georgia. It was their opinion that these titers indicated the patient was infected with Leptospira Ictero hemorrhagie.

Case History No. II

A 54 year old Negro woman patient was admitted on August 18, 1956 with chief complaint of headache, stiffneck, high temperature of 2 days duration. Her illness began suddenly 2 days before admission with stiff neck, very severe frontal headache and fever. The day after admission, the stiffness of neck became more pronounced. Physical examination was negative except for marked nuchal rigidity. Spinal tap was performed on admission with initial pressure 210 mm H_{20}, 15 WBC, 13 polys., 2 lymphs, total protein 38.4 mg.%, globulin 4+. The blood count was 11,350 per cu.mm. WBC with 16 stab., 68 segs., 15 lymphs, 1 mono. Hemoglobin was 76% (11.4 gms.). Urinalysis revealed specific gravity 1010, 4+ albumin, 12-14 WBC, 6-8 RBC, a few days later, she developed tenderness in both parotid glands and the right parotid gland was felt to be enlarged. Abdomen was tender with moderate distention, especially in the upper abdomen. She was noted to be jaundiced. The serum amylase was 229, icterus index 60 units, cephalin flocculation 2+, thymol turbidity 4.5 units, VandenBerg direct 8.5 mgm.%, indirect 2.2 mgm.%, total 10.7 mgm.%, BUN 60 mgm.%. The temperature became normal two days after admission. Patient was treated with penicillin 600,000 units, BID. The general condition of the patient improved markedly 5 days after admission. Repeat BUN was 18 on August 27, 1956. Serum bilirubin was direct 4.9 mgs.%, indirect 0.9 mg.%, total 5.8 mg.%. Patient was discharged on the 13th day completely asymptomatic. The Leptospiral agglutinations were as follows: September 4, 1956, L. ictero 1:256, L. canicola 1:128, L. pomona 1:28; October 22, 1956, L. ictero 1:128, L. canicola 1:16, L. pomona 1:32; February 15, 1957, L. ictero 1:128, L. canicola 1:32, L. pomona 1:64. In this patient, no history of the possible source of infection was elicited.

DISCUSSION

The combination of hepatic, renal, and central nervous system involvement in an acute febrile illness should be considered almost pathognomonic of Leptospirosis.

Of the two cases presented, the first had significant hepatic and central nervous system involvement and the second evidence of involvement of hepatic, renal and perhaps the central nervous system.

The clinical picture of Leptospirosis is reviewed by the authors. Two cases with suggestive serological confirmation are presented.

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● **Contact lenses, in addition to their increasing popularity for cosmetic purposes, are found to be superior to regular glasses in correcting certain types of visual problems.**

AN EVALUATION OF CONTACT LENSES

William H. Kratka, M.D.*

Due to the fact that there are now over seven million contact lens wearers, and a marked increase daily in public interest, I believe it is the obligation of all doctors to be well aware of the facts on this subject.

As a result of improved lenses and fitting techniques there has been a big increase in the percentage of successful wearers. Over 50 per cent now wear their lenses all day (16 or more hours) and about 80 per cent wear them a big part of the day (8 or more hours). A small percentage are even wearing them without removal for months.

History

Contact lens history goes back to 1888 with the first lens of Wiesbaden. These were made of glass and were of the large scleral type (up to 25 mm. in diameter) and over ten times as heavy and thick as our modern microcorneal lenses. In 1948, the Tuohy lens marked the beginning of the smaller, plastic, corneal type of lens. 1954 saw the introduction of the microlens which was 9.5 mm. in diameter and fit only on the cornea. In the past five years, there have been progressive refinements and other improvements to achieve better fitting and longer wearing time for the patient. No longer does the patient have to introduce special fluids into the eye, as the lens now rides on a fine layer of normal tear fluid between the lens and the anterior corneal surface.

Role Of The Ophthalmologist

At the present time the handling of the contact lens patient varies with the Ophthalmologist. Most of them are still acting only as a consultant who does the refraction and then refers the patient to an optical technician for the lens fittings. The Ophthalmologist later checks the refraction again with the contact lenses in place. He should also examine the fit by means of a slit-lamp (after the installation of fluroescein eye drops) in order to determine the lens-corneal relationship. An increasing number of Ophthalmologists are doing their own fittings and in this manner have full control of the patient. In this instance, the doctor takes all the measurements, orders the lenses, and checks the fittings himself. This includes the refraction and the Keratometer readings to determine the proper radius of curvature for each individual patient.

Indications For Contacts

The most common use of contact lenses today is for the correction of marked myopia, hyperopia, and/or astigmatism, particularly where a patient has been a constant eye glass wearer for years. The added advantages of increased visual acuity, greater field of vision, and markedly improved cosmetic appearance makes for a highly motivated and often better psychologically adjusted patient.

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This type of lens is also indicated and extremely helpful to the post-operative cataract patient. The elimination of the regular thick aphakic lens removes the annoying prismatic distortions and provides a larger field of vision. Is is particularly helpful in the monocular aphake especially following removal of a traumatic cataract. Use of a single contact lens allows this patient to regain his binocularity.

Where patients have subnormal vision and are inadequately aided by regular glasses, contact lenses often make possible increased visual acuity especially when combined with high powered magnifying lenses in their glasses, thereby creating a most satisfactory telescopic lens combination.

In cases of Keratoconus, contact lenses frequently produce a marked improvement in vision over that obtained by regular lenses and often eliminate the necessity for corneal transplant surgery.

There are numerous vocational, avocational, and occupational indications for contact lenses. Today there is a greater demand for them from people in the sports and theatrical field, not only for cosmetic reasons but for the added safety and visual benefits they offer.

Contraindications

Since there is a definite adjustment period to these lenses, usually ranging anywhere from two weeks to three months, motivation or "intense desire" on the part of the patient (not just an idea on the part of the spouse, mother, father or friends) is a must. No one should try to to wear contact lenses without the proper motivation. Moreover, the emotional or neurotic patient should never be considered a good subject for contact lenses.

Other contraindications include local ocular disturbances such as allergic lid irritations, excessive dryness of the eyes, epihora, corneal degeneration, and spastic or "tight" eyelids.

CASE REPORTS

Case I

Severe Myopic Astigmatism and Anisometropia

Patient: Age 23, white woman
History — Patient had worn glasses since grammar school but was never able to see well in the distance with them.

Vision

R.E.	20/300 without	20/70 with
L.E.	20/300 correction	20/70 correction

(About 70% of normal vision with correction)

Patient was wearing:

R.E. — 8.50 + 1.00 x 85 = 20/70
L.E. — 8.75 + 1.50 x 90 = 20/70

Refraction revealed:

R.E. — 17.25 + 5.25 x 85 = 20/40
L.E. — 11.75 + 3.75 x 95 = 20/30-4

Apparently this patient had been purposefully under-corrected by her previous doctor in view of the obvious severe anisometropia (marked difference in refraction of the 2 eyes). This difference of image size would have been impossible to tolerate, and she would not have been able to maintain binocularity for any length of time.

This patient was fitted with contact lenses to which she adjusted very rapidly. Her vision improved to 20/30 + 2 in each eye (or approximately 94% of normal vision). She is at present wearing her lenses up to 16 hours daily and having no difficulties. Needless to say she is a very happy young lady.

Case II

Post traumatic monocular aphakia
Patient: Age 31, white man automobile mechanic

History — Lacerated globe and damaged lens while at work. The injury resulted in a traumatic cataract which had to be removed about ten months following the original accident. Post-surgically, the patient developed a large Exotropia (Divergent Squint) of the aphakic eye. This was corrected by the wearing of a single contact lens plus a period of Orthoptic exercises. This patient now wears his lens full time and has 20/20 vision in each eye plus second grade fusion with good amplitudes. When the lens is removed, the eye immediately diverges way out and causes a marked cosmetic blemish.

SUMMARY

From the above facts and figures we realize that it is important for all physicians (not only Ophthalmologists) to be conversant on this increasingly popular topic, and that they should be aware of the many excellent indications for and proven advantages of contact lenses for an increasing number of eye problems.

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THE FEDERAL EMPLOYEES HEALTH ACT — Its Significance for Medicine

The Federal government, as an employer — the largest employer in the U.S.A. — is about to provide medical care security to some 4 million Federal employees and their dependents. There are about 4,000 Federal employees in Delaware.

Under the new Health Benefits Act passed by Congress last September, government workers will begin to enroll about June 1, 1960 in one or another of four types of hospital and medical care programs: 1) Blue Cross-Blue Shield; 2) a commercial insurance plan; 3) an employee organization plan (set up by Federal employee organizations); 4) a comprehensive "closed panel" plan — where such programs exist. Federal contributions will commence in July toward the cost of whatever plan may be selected by each Federal worker.

Each employee will have the utmost freedom to choose among the specific plans to be approved by the U. S. Civil Service Commission in negotiations now going on between the Commission and the "carriers" of the four types of program specified in the Act.

Our government has shaped its program in accordance with the mutual desire of its employees and their doctors for a free choice of physician and plan.

To meet the natural requirements of the Civil Service Commission for a reasonable degree of uniformity among the programs offered by the 79 Blue Cross and the 67 Blue Shield Plans, many Plans will have to alter or add to their established benefit provisions. This will call for cooperation among all of us who are presently providing services to patients under our local Blue Shield Plans.

The significance of the Federal Employee Health Benefits Act for the future of American medicine can scarcely be exaggerated. Under the terms of this act, our government will contribute toward the cost of a hospital and medical care coverage program for all Federal employees. Thus, the government as an employer assumes a direct interest in, and responsbility for, the health care of its career employees.

Moreover, the government may be expected to scrutinize the effectiveness of the coverage provided in order to assess the capacity of our voluntary programs to function in an acceptable fashion in meeting the public's need for "prepaid" health services. Thus, our voluntary system of prepayment as well as those dedicated to the support of those programs may be said to be on trial. And if our physician-sponsored programs serve creditably and satisfactorily, the medical profession through its own prepayment plans will have struck a mighty blow for the future of free enterprise and the private practice of medicine.

President's Page

A.M.A. figures show that with present population growth rate the United States in 1970 will have 30% less physicians per population ratio than we have today. Our 6860 annual graduates from United States medical schools will be woefully inadequate in numbers. To keep our present ratio, by 1975 we will need 11,000 graduates annually. Where are they to come from? Will it be possible for physicians to increase their work loads by 30%?

Today foreign graduates are filling the gap (8392 in 1958-1959). In New York City, 50% of all hospital residents are foreign trained while 25% in the rest of the United States are foreign trained.

Since United States hospitals have openings for 44,695 residents and interns, how can 6860 graduates fill the needs?

Foreign graduates will fail to supply demands after 1960 when they must be certified abroad before they can be accepted in an approved United States intern-residency program. Only then will they be allowed to apply for five year exchange visitor visas.

The A.M.A. ruling directly affects about 1400 hospitals leaving the 5500 others to do as they please. The American Hospital Association has served notice that hospitals that refuse to drop uncertified foreign graduates will be dropped from listing in the 1961 A.H.A. directory. In other words they will lose their "accreditation."

March 16, 1960 examinations for foreign graduates were given by the Educational Council for Foreign Medical Graduates. About 45% of the 6500 are expected to qualify for full certification. 25% are expected to get temporary certificates, good for two years. The remaining 30% or 2000 plus foreign graduates are expected to fail.

Hospitals already have too many vacancies in intern and residency positions and will be worse off than ever since they will be forced to discharge uncertified foreign graduate house staff members.

Most who have studied the matter agree that the solution is to enlarge present United States medical schools and to build new ones. Many think that Delaware could and should build a two year school. Since there are at present 700 vacancies in third and fourth year United States medical school classes, graduates of two year schools are eagerly sought.

James E. Marvil

President, Medical Society of Delaware

Editorials

THIS MONTH'S SCOREBOARD—

On May 10th an ambulance on its way from Newark to the Delaware Hospital allegedly went through a red light and collided with another car. The patient in the ambulance suffered injuries and there was considerable property damage.

Less than two weeks later a child known to be allergic to bee sting was stung while riding on or near the New Jersey approach to the Delaware Memorial Bridge. It was reported that her life was saved by reason of her rapid transit to a Wilmington hospital where she received an injection of adrenalin. This incident represents one of the few medical emergencies where time truly is a factor. There are two other factors, however, that seem to have been overlooked: If the incident actually did occur near the New Jersey approach to the bridge, there was a hospital much closer than any of the Wilmington hospitals; furthermore, there is no traffic at all between the bridge and the Salem Hospital. Secondly, is this child expected to go through life within sprinting distance of a hospital? Surely it would be more reasonable to instruct the parents in the use of a hypodermic syringe and give them adrenalin for emergency use.

AIN'T IS IN THE DICTIONARY—

The recent revision of a Cornell classic, *The Elements of Style*, stresses simplicity and brevity, two of the undoubted essentials of good style.

It always is distressing to see the birth of a new word, particularly when it seems to be an unnecessary addition. Unlike *ain't*, *contratest* isn't in the dictionary but, judging from the context, it probably means control. This word has recently flourished in some medical journals whose editors can not practice as they preach. Let us look for an early demise of this stranger whose sound is so reminiscent of bureaucratic boondoggling.

FOREIGN RESIDENTS AND INTERNS

The President of the Massachusetts Medical Society considered the subject of foreign residents and interns in Massachusetts hospitals of sufficient importance to use it as the subject for the Presidential Address. This was published in the New England Journal of Medicine whose editor saw fit to comment.

Dr. Bearse began by stating that although 36 per cent of Massachusetts internships and 28 per cent of the residencies are filled by non-United States graduates, there still exists a substantial number of unfilled positions in both of these categories.

In 1957, allegedly to protect the hospitals from inadequate applicants, the Educational Council for Foreign Medical Graduates was formed by the American Medical Association, the American Hospital Association, the Association of American Medical Colleges, and the Federation of State Medical Boards. The results of examinations given by this Council to foreign graduates have shown poor results, mostly due to a language difficulty. Because of the Council and the examination for certification, there will be many fewer residents and interns available after July, 1960.

Who examines the examiners?

In Brief

Checking Up!

A U.S. Department of HEW survey of 9,396 doctors showed that in 1958 less than half had had physical examinations within the preceding 18 months. Twenty per cent admitted that more than four years had elapsed since their last checkup.

About Face

Nitrogen mustard gas (product of World War I) has been found to act against solid tumors by combining or cross-linking with components of their cells which prevents them from dividing. Researchers hope to find nitrogen mustard effective in prolonging life and easing pain in patients suffering from cancer of the lung, breast and colon. Unpleasant side-affects of nausea have presented an obstacle but one derivitive — *Cytoxan* — is showing promise in counteracting this condition.

Cross-Education

When a person trains one arm or leg he also learns the same skill with the other. Strength increases on both sides of the body. Twenty-four coeds have been undertaking a grueling weight lifting program at the University of Wisconsin's Motor Learning Research Laboratory to determine how muscle development can benefit crippled children. This experiment is under the direction of Frances A. Hellebrandt, M.D., specialist in the science of exercise and rehabilitation.

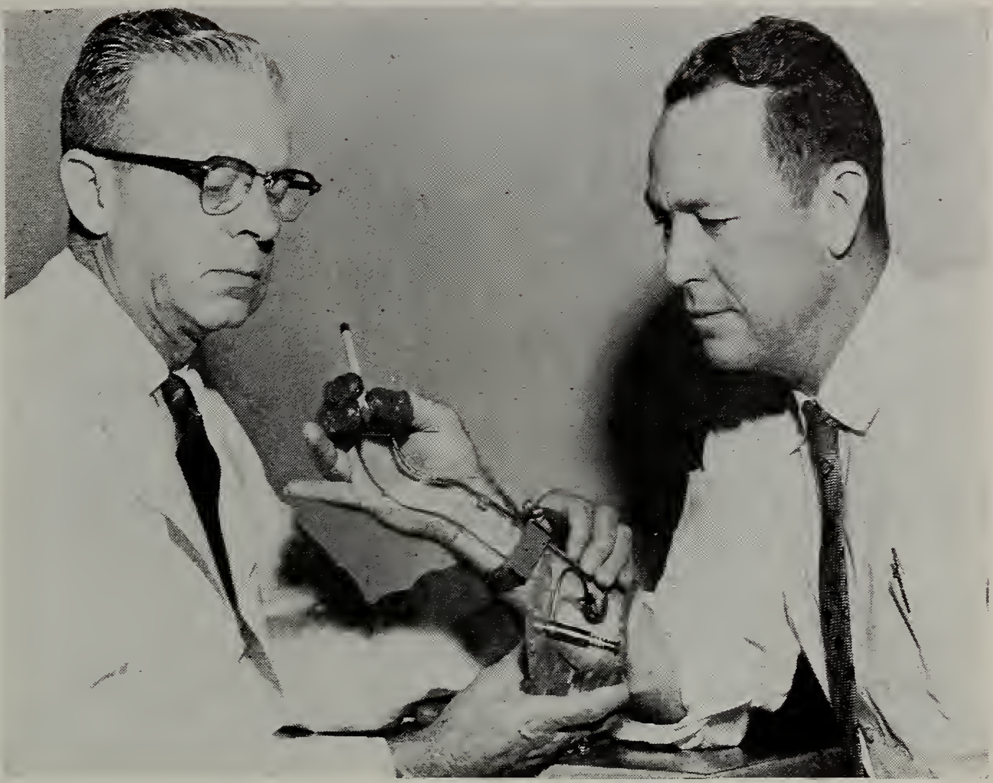
Mongolism

The U.S. Public Health Service reports that mongolism afflicts more than 35,000 infants born in the United States every year. The theory that an unknown factor in early pregnancy interferes with the embryo has been further developed by the recent discovery that 47 chromosomes were found in mongoloids studied, instead of the standard human 46. *Mongolism — Hope through Research* was written by the National Institute of Neurological Diseases and Blindness. A free copy may be obtained from the Institute, Bethesda 14, Md.

Meeting the Curve

A study prepared by the Joint-Congressional Economic Committee forecasts that the United States population will increase to an estimated 196,000,000 in 1965 and 214,000,000 in 1970, which will further raise the demand for medical care. The prediction is also that the ratio of doctors to population will fall to about 130.5 per 100,000 population in 1970 if the number of medical school graduates does not increase above currently predicted levels. The Committee reports that the supply of health facilities will be severely taxed unless there is a broadening of such measures as the Hill-Burton Program which provides federal aid for construction of these facilities.

Mechanical Hand For Paralysis



Arthur J. Heather, M.D., medical director of the department of physical medicine and rehabilitation of the Eugene duPont Memorial Hospital, Wilmington, demonstrates the operation of the mechanical hand which he invented and perfected. Charles Daniels, engineer who assisted in designing the device, is wearing the six-ounce hand which tests prove will withstand years of use. The hand was developed under an Easter Seal Grant.

New Aviation Ruling

The Federal Aviation Agency now requires that student and private pilots be given their medical examinations by designated medical examiners. This rule, effective June 15th, reinstates a practice which was dropped in 1945. Physicians who wish to file applications for designation may write to: Civil Air Surgeon, Federal Aviation Agency, Washington 25, D.C.

State-Wide Representation

A change in the by-laws of Group Hospital Service, Inc., will provide state-wide representation of Delaware physicians on the board of the Blue Cross-Blue Shield organization. Six physician members will be named by the Medical Society of Delaware. Previously, four were named from staffs of the general hospitals in Wilmington and two by the New Castle County Medical Society. In addition, the board will have six representatives of trustees of hospitals in Delaware and five representatives of the public.

Forum

A medical economics forum will be held at the Sheraton Hotel in Philadelphia on June 22nd, sponsored by *Medical Economics*. Physicians in private practice in Delaware are invited to attend and participate in practice-related programs. Fees and registration details may be obtained by writing Mr. Edward Polo at the hotel, 1725 Pennsylvania Boulevard, Philadelphia 3, Pa.

Personal Glimpses

C. Anthony D'Alonzo, M.D., elected to the board of directors of the Industrial Medical Association . . . Costos Terekides, M.D., resident at Wilmington General Hospital, awarded $1,000 Mead Johnson Fellowship by American Academy of General Practice . . . Irvine M. Flinn, Jr., M.D., elected honorary member of the board of the Delaware Curative Workshop, in recognition of fifteen years' service . . . Sanford G. Rogg, M.D., presented a paper —"Mental Health and Industrial Change" before the American Academy of Occupational Medicine. It's being published in the AMA Archives of Industrial Health . . .

M. A. Tarumianz, M.D., elected president of the National Association of State Mental Health Program Directors and chairman of the Ethics Committee of the American Psychiatric Association. Dr. Tarumianz was cited for leadership in transforming mental hospitals "in the short time of a decade from refuges of despair to havens of hope" . . . Robert L. Dewees, M.D., elected president for 1960-61 of the Delaware Heart Association; Harold A. Tarrant, M.D., elected vice-president . . . Walter H. Lee, M.D., elected to the board of the Delaware State Hospital, replacing the late Dorsey W. Lewis, M.D. . . .

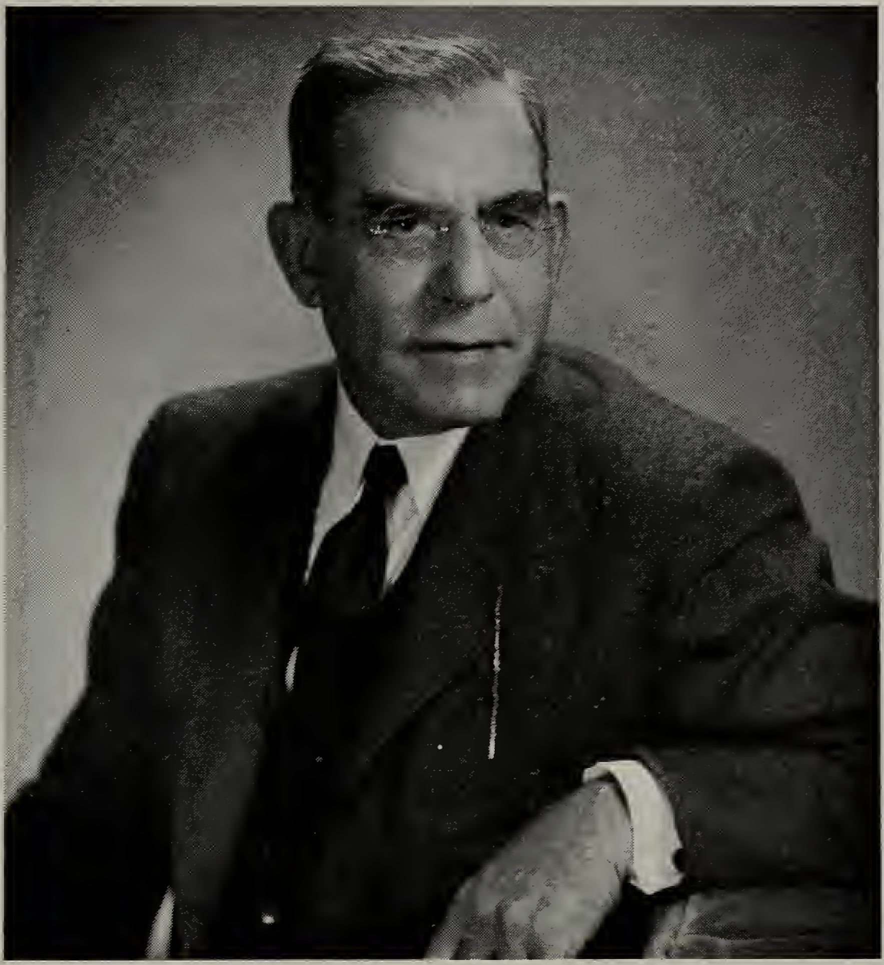
Floyd I. Hudson, M.D., praised by the Governor for excellent administration of the State Department of Public Health, at cornerstone ceremonies for the Department's new building . . . Lewis B. Flinn, M.D., and Allen J. Fleming, M.D., elected to the board of the Welfare Council . . . Robert W. Frelick, M.D., accepted the charter of the new Delaware Society of Internal Medicine at the annual meeting of the ASIM . . . Thomas H. Hogshead, M.D., addressed the N.Y. Convention of Alcoholics Anonymous and credited the success of the DuPont approach in treating alcoholism to the application of A.A. principles . . .

Reputations At Stake

Judge Forte, in ordering dismissal of mal-practice suits against three doctors in Lawrence, Mass., pointed out to the jury that the trouble and expense of a possible suit incurred every time an operation goes wrong, will cause many doctors to be unwilling to take chances. He also directed his attack on lawyers who bring these cases to court without any real basis, adding, "Because a man brings an action to court doesn't prove that he is in the right anymore than it means that the man charged is guilty."

Occupational Diseases Climbing

There has been a five-fold increase, spanning a twenty-five-year period, in the number of physicians working full-time in industrial medicine — from 232 in 1934 to 1,247 in 1958 according to *Patterns of Disease*, Parke, Davis and Company's publication. The number of physicians — mainly GPs — engaging in this field on a part-time basis is also on the increase, it stated, adding—"commonest industrial health problem is occupational dermatitis — about 90% — caused by contact with chemicals." About half of this is attributed to petroleum products. Silicosis remains a major occupational disease, and heart conditions the number one employee disease.



EMIL R. MAYERBERG, M.D. — 1892 - 1960

The Medical Society of Delaware lost one of its most valued senior statesmen on May 8th. President of this society in 1941, Dr. Mayerberg had been president of the New Castle County Medical Society eight years earlier.

Born in Goldsboro, North Carolina on May 6, 1892, Dr. Mayerberg graduated from the Philadelphia College of Pharmacy and Science in 1912 and Jefferson Medical College in 1916. After serving his internship at the Delaware Hospital, he entered practice with Dr. J. Atkinson Ellegood, a practice limited to disease of the eye, ear, nose, and throat. He was certified by the American Board of Otolaryngology in 1927.

Dr. Mayerberg was a founding member of the Delaware Academy of Medicine, a fellow of the American College of Surgeons, the American Academy of Ophthalmology and Otolaryngology, and the Philadelphia Laryngological Society. He was a member of the regular staff of the Delaware and Wilmington General Hospitals, having been president of the staff in each, and a member of the courtesy staff of the Memorial and St. Francis Hospitals. He was consultant to Delaware State Hospital.

His community activities were many and varied. He was founder of the speech and hearing clinic at the Delaware Hospital, active in the Children's Bureau, the American Red Cross, the Delaware Commission for the blind, and former president of the Wilmington Board of Health. He served on the Advisory Medical Board in both World Wars.

STATUS REPORT ON DISASTER PREPAREDNESS PLAN

OF THE MEDICAL SOCIETY OF DELAWARE

The medical preparedness plan in the State of Delaware should be viewed with respect to the unique situation of our commonwealth. The population, estimated at 400,000, occupies most of a peninsula with 300,000 residing in the small end of the state connecting with the mainland. One may travel over excellent roads from one end of the state to the other 2½ hours without exceeding speed limits. Our small size and the concentration of the population in the urban, northern end has resulted in the development of medical preparedness especially by the county medical society including this area.

In April, 1951, a county medical chief of civil defense was elected. His responsibilities were (1), to plan full utilization of all medical resources, including first aid facilities, doctors, and hospitals, (2), to coordinate medical emergency provisions with the overall civil defense program, and, (3), to account to the civil defense authorities for the administration of all emergency facilities. The medical chief appointed civil defense chairmen for each of the four Wilmington general hospitals and a chairman to be responsible for organization and administration of first aid stations and centers.

In September, 1952, the members of the county society were divided into four groups and directed to report in the event of emergency to specific hospitals. Plans were also made to utilize an orthopedic hospital for patients with major fractures of the extremities and the spine, and to staff first aid stations with physicians as well as with members of the dental, nursing, osteopathic, and veterinary professions, chiropodists, physical therapists, and others. Emergency medical staffs were divided into the following teams:

1. Admitting or triage.
2. Operating teams for general surgery and chest surgery, with anesthetists.
3. Ambulatory surgery.
4. Fracture teams.
5. Burns.
6. Dental teams.
7. Evacuation.
8. Laboratory.
9. Shock.
10. Medical division.
11. Recovery room
12. Evacuation teams.
13. Reserve unit

In addition, nurses recruited from alumnae files were asked to stand by for assignment to hospitals in the event of disaster. Neighborhoods were surveyed and questionaires sent designed to uncover volunteer workers and beds for hospital personnel. Plans for increasing the capacity of the hospitals were laid. A telephone call plan was drawn up to notify the staff immediately in case of disaster. Neighborhood drug stores were contacted by hospital pharmacies to serve as sources of emergency drug supply.

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*Seventh Regional Meeting, Committee on Disaster Medical Care, Council on National Security, American Medical Association, Washington, D. C., April 23, 1960.

In April, 1953, the following subcommittees of the county medical society committee on civil defense were established: burns, chemical, defense, biological defense, and radiological defense.

In May, 1953, commanders of American Legion and VFW Posts were contacted to ascertain which members had been army or navy medical corpsmen and who of these people would volunteer their services to a civil defense medical plan.

In February, 1955, a list of women having completed Red Cross home nursing courses was procured at the request of the Office of Civil Defense for Wilmington for assignment to specific first aid stations.

In October, 1956, an institute on medical management of casualties in disaster was organized by the Delaware Chapter of the American Red Cross and conducted by a medical team from the Walter Reed Hospital. About 19 other medical organizations in Delaware participated, including the state and county medical societies, The Delaware State Nursing Association, The League of Nursing Education, dentists, pharmacists, and the OCDM.

About 1956, and again in 1958, the list of physicians assigned to hospitals for civil defense duty was revised and brought up to date. The latter is the most recent list available.

A list of standing orders to be used by first aiders in emergencies when no physician is in attendance was approved by the state medical society for distribution by the Delaware Chapter, A.R.C., to qualified first aiders.

About 1958, one of the hospitals held two practice medical disaster drills with similated casualties supplied by the Red Cross.

At about this time the OCDM set up and demonstrated one of the three 200-bed emergency hospitals.

At the present time the OCDM has a comprehensive, over-all plan and physical facilities, including 52 sets of first aid station supplies. However, the volunteer personnel on which it must depend to implement the medical component of the plan is lacking.

The Delaware Chapter of The American Red Cross has an active file of about 350 nurses who have indicated their willingness to serve in emergencies. Instruction in first aid and home nursing are continuous activities.

The activities of organized medical societies in the sphere of civil defense in Delaware have varied with the enthusiasm, past military experience and available time of those appointed to civil defense committees.

The concept of increasingly destructive bombs and fallout requires extending our horizon in the sphere of medical preparedness. At the same time, continuation of active plans and exercises to meet the local disaster and personal emergencies which are bound to happen are useful preparatory activities.

Douglas M. Gay, M.D.*

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*Member, Civil Defense Committee, Medical Society of Delaware.

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FAMILY PREPARDNESS

"The Family Fallout Shelter", Office for Civil Defense Mobilization Booklet #MP-15, is available in quantity through state civil defense directors. It includes plans for five types of shelter from radioactive fallout. The FHA and other agencies will make loans for shelter constructions on a direct-to-borrower basis.

New Members

Daphne Anderson Roe, M.D., was born in London, England, received her medical education at the Royal Free Hospital School of Medicine and obtained her Delaware license in 1958. Dr. Roe, a specialist in dermatology, likes to paint, read and enter in church activities in her extra curricular time, when she isn't looking after her three lively children. Currently Dr. Roe is on a public health grant for research on psoriasis. Office: 1401 West 11th Street, Wilmington.

C. Patricia Turner, M.D., is a Wilmingtonian. She graduated from Meharry Medical College '49, interned at Hubbard Hospital, Nashville, Tenn., and obtained her Delaware license in 1952. Her favorite hobby, besides her daughter, is chess. Bowling and playing the piano run a close second. Dr. Turner is in general practice — Office: 1214 French Street, Wilmington.

Contributors Column

George J. Boines, M.D., Jefferson Medical College, served his internship at the Reading General Hospital, Reading, Pa. and his residency at St. Francis Hospital, Wilmington. Dr. Boines was in charge of the Poliomyelitis Treatment Clinic at the Doris Memorial Unit of the Wilmington General Hospital from its inception in 1941 to 1947. Dr. Boines is director of Delaware's Virus Laboratory which was established last year.

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Olin S. Allen II, M.D., Temple University Medical School, is a Wilmingtonian — served his internship at Memorial Hospital and has recently completed his residency in radiology at Reading Hospital, Reading, Pa.

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William H. Kratka, M.D., Temple University School of Medicine; University of Pennsylvania Graduate School of Ophthalmology; residency at Wills' Eye Hospital, is a certified specialist and has had numerous articles on ophthalmology published in nationally known eye magazines.

Elmer Gross, M.D., University of Michigan Medical School '53, had a rotating internship at Delaware Hospital before completing his graduate studies in dermatology at Columbia University. Dr. Gross was Assistant and Associate Professor of Dermatology and Chief of Syphilis Clinics at Temple University from 1941-45. Currently he is on the active clinical staff in dermatology at Wilmington General, St. Francis and Memorial Hospitals.

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Ertugrul Tekisalp, M.D., graduate of Istambul University Medical School, '53, is in his second year of residency at Wilmington General. After completing his education, Dr. Teksialp expects to return to his home in Izmir, Turkey.

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Kyu Pum Lee, M.D., Seoul University School of Medicine, Korea, '56, interned in Washington, D. C.; had two years of residency in Ob-Gyn at St. Luke's Hospital, Bethlehem, Pa. and has been a resident in internal medicine at Wilmington General since July, 1959.

Auxiliary Affairs

FEATURING THE ACTIVITIES OF THE WOMAN'S AUXILIARY

TO THE KENT COUNTY MEDICAL SOCIETY

The Woman's Auxiliary to the Kent County Medical Society is the smallest in the State. With twenty-eight practicing physicians and every doctor's wife a member, they are justly proud of 100 per cent Auxiliary participation.

Under the able direction of their President, Mrs. Harold J. Laggner of Smyrna, they meet three times a year at the Dover Hotel. Their meetings consist of a luncheon and social hour followed by a business session. Mrs. Robert Layton of Dover is Secretary and Mrs. Edward Dennis of Dover is Treasurer.

They are a busy, active group of women who take a very special interest in the Future Nurses Clubs in the high schools of the County. They entertain the girls who look forward to becoming nurses and see that they have opportunities to visit hospitals in the State where they might enroll for training.

A quick glance at some of the activities of a few of the members quickly reveals a wide range of participation in community as well as Auxiliary affairs.

Mrs. Richard W. Comegys of Clayton attended the A.A.G.P. Clinical and Scientific Meeting in Wilmington last December where she acted as hostess with characteristic competence. She used that same efficiency as Chairman of the Red Cross Drive in Clayton. She is a former President of the State Auxiliary, as are Mrs. Hewitt W. Smith of Harrington and Mrs. Joseph S. McDaniel of Dover, two more active contributors.

Mrs. John J. Lazzeri, of Smyrna, last year's County President, was responsible for the survey of facilities for the Aged in Kent County. She reports that a telephone call to Dr. C. J. Prickett at the Welfare Home in Smyrna was rewarded with an invitation to visit the Institution. She was impressed with the care provided at the Home and urges everyone who has an opportunity to arrange a visit.

Mrs. John Krieger of Dover accompanied her husband to a meeting of the American College of Obstetrics and Gynecology in Atlantic City last April and to another regional meeting at Hershey, Pennsylvania, in the fall.

Mrs. Henry V. P. Wilson of Dover is Chairman of the Commission for the Blind and a member of the Board of Directors of the Palmer Home in Dover. The Palmer Home is one of the very well run homes for aged women in the State, and Mrs. Wilson has spent much time and effort in their behalf.

A little over a year ago, Mrs. O. J. Pollak accompanied her husband to the Orient when Dr. Pollak spent five weeks there, on invitation, visiting and lecturing on "Diet and Atherosclerosis" in universities and hospitals in Tokyo, Nikko, Kyoto, Nara and Osaka in Japan, Bangkok in Thailand, and Hong Kong. This work was aided by a travel fellowship from the Albert and Mary Lasker Foundation which was awarded to Dr. Pollak two years ago. During their visit, the Pollaks invited their overseas doctor friends to visit them in Dover. This year they have been pleasantly surprised and rewarded with vistors from Japan and Hong Kong, which certainly gives life in Dover a cosmopolitan flavor.

MAJOR MEDICAL MEETINGS IN DELAWARE

Standing Schedule

Beebe Hospital	General Staff	2nd Friday	Monthly
Delaware Hospital	General Staff	2nd Tuesday	Feb., May, Sept., Dec.
Kent General Hospital	General Staff	3rd Tuesday	Monthly
Memorial Hospital (Wilmington)	General Staff	2nd Tuesday	Jan., March, June, Oct.
Milford Memorial Hospital	General Staff	2nd and last Tuesdays	Monthly
Nanticoke Memorial Hospital	General Staff	1st Thursday	Monthly
St. Francis Hospital	General Staff	4th Tuesday 1st Tuesday	March, May, Oct. December
Wilmington General Hospital	General Staff	4th Tuesday	Jan., April, Sept., Nov.

Kent County Medical Society	Monthly Meeting	3rd Tuesday	September - June
New Castle County Medical Society	Monthly Meeting	3rd Tuesday	September - June
Sussex County Medical Society	Monthly Meeting	2nd Thursday	September - June

Delaware Academy of General Practice	Monthly Meeting	1st Tuesday	September - June
Delaware Pathology Society	Weekly Meeting	Each Friday	

Special Schedule

Delaware Diabetes Association	General Meeting	Lewes, Delaware	5:00 P.M. September 9, 1960
Medical Society of Delaware	Annual Meeting	Rehoboth, Delaware	September 8, 9, 10, 1960
Delaware Academy of Medicine New Castle County Medical Society Delaware Diabetes Association	Joint Meeting	Delaware Academy of Medicine	October 18, 1960
	Speaker: Thaddeus S. Danowski, M.D.		
Delaware Academy of Medicine	Annual Lecture	Wilmington, Del.	November 29, 1960
	Speaker: Richard H. Overholt, M.D.		
Delaware Academy of General Practice	Annual Meeting	Delaware Academy of Medicine	December 9, 10, 1960

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INTERNISTS-QUO VADIS*

REFLECTIONS OF A DIRECTOR OF MEDICINE

Lewis B. Flinn, M.D.**

Recently Dr. William B. Bean reviewed the progress of Internal Medicine during the past 100 years. Dr. Bean's writings always make delightful reading and this article is no exception. In 1859 life expectancy was 40 years; in 1959 it was 73 years. About 1859 Rudyard Kipling wrote without fear of serious refutation.

"Wonderful little, when all is said,
Wonderful little our fathers knew
Half their remedies cured you dead
Most of their teaching was quite untrue"

In 1959 Dr. Bean concludes that "*Internal Medicine can contribute most for the patient where it is learned by hard study and discipline and taught by scholars who have mastered the skills of teaching, the crafts of the clinical arts and the accuracy of laboratory science in the care of the patient.*"

What can be expected during the next 100 years? If this seems too far to attempt to envision, let us endeavor to look ahead the next ten years. Even this short span may be a little frightening. Let us confine the query a little more closely. Where is the internist headed in this community in the near future? Let us define an internist in perhaps the simplest terms ever used—as a member of the active staff of the Department of Medicine of this hospital. What path should a younger member of this department pursue?

He should, of course, strive to adhere to the tenets of Dr. Bean's conclusion as stated above. What is truly best for the patient in the long run is always also best for the physician; a fact not always appreciated by medical residents and young practitioners. Nevertheless, the young internist may be in a quandary as how best to proceed or he may be in no quandry at all but erroneously self sufficient!

We have endeavored over the years to develop post-graduate teaching. Could it be that this teaching effort has given the budding internist a false sense of educational security instead of stimulating him to ever greater self educational initiative? Could it be that a sense of smugness has developed that has stifled any smoldering interest in reporting to confreres or preparing for publication interesting cases, clinical observations or clinical investigations? Dr. Paul Tillich is concerned about the loss of what he terms the dimension in depth in the field of religion. Are we in danger of losing what might be called the dimension in depth in the field of medicine? Some of our internists have not completed a three-year medical residency. This should not interfere with their continued growth in Internal Medicine. Even the American Board of Internal Medicine has recognized this and accepts for examination individuals who have been in active practice as long as twelve years. Should a recent graduate of an accredited three-year medical residency strive to become a diplomate of the Board of Internal Medicine? The answer is probably yes, but it should be remembered that although a diploma from the Board is nice, it is not everything. Instead of using the diploma as a stepping stone to other medical interests, some internists consider it an end in itself. Membership in the American College of Physicians or other specialty medical groups is even more to be desired and certainly more stimulating. It is true that a few individuals spend a lot of time going from medical meeting to medical meeting with little real gain except a detailed knowledge of methods of transportation. On the other hand, the individual who is content to confine his educational pursuits to reading journals in his own arm chair loses perspective and tends to become a medical hermit. One of the most valuable and most important and most rewarding experiences an internist can have is to know personally and be on speaking terms with other internists in other parts of the community, the state, the country, and even throughout the world. Attending medical meetings or visiting other clinics, if done in the right spirit and at reasonably regular intervals, is well worth the time and expense involved.

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*A copy of this was sent to all active members of the Medical Staff of the Delaware Hospital.

**Director of the Department of Medicine, Delaware Hospital.

Let the internist then have a true sense of humility; let him have an awareness that other internists have similar problems for which answers may have been found which can best be learned by personal contact; let the internist have an interest in broadening his medical background. If he will also adhere to the concept of hard study and discipline in the art and science of medicine, he will truly approach fulfillment of his professional capabilities and really excell and exceed his teachers. Should such a course prevail, the story of Internal Medicine in ten, fifty or one hundred years will indeed be interesting to record.

Contributors Column

Dr. Charles A. R. Skowron, Georgetown University School of Medicine '43 and specialist in thoracic surgery, is director of the tumor clinic at the Delaware Hospital, Wilmington.

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R. A. Kahlbaugh, M.D., finished his residency in medicine at the Delaware Hospital on July 1st. Dr. Kahlbaugh will report to active duty with the U.S. Air Force on August 17 and expects his permanent station to be in Del Rio, Texas.

J. Richard Durham, M.D., F.A.C.P., is director of the Heart Clinic, Delaware Hospital and consultant in cardiology at the VA Hospital, Wilmington. Dr. Durham is certified in cardiology and internal medicine.

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L. William Ferris, M.D., Tufts Medical College, Boston, Mass., served his internship and residency in surgery at the Delaware Hospital, Wilmington, and is at present completing his residency there in urology.

PULMONARY SARCOIDOSIS

Pulmonary Function Studies

● **Sarcoidosis is becoming more important to the clinician as our knowledge of the disease increases. Pulmonary function studies occupy an important position in the evaluation of patients with the pulmonary form of this disease.**

James M. Hofford, M.D.*

Pulmonary function tests have assumed an important position in diagnosis, follow-up and evaluation of therapy in various pulmonary disorders. The physiological changes which occur in pulmonary sarcoidosis are to a certain extent typical, but may vary with the stage of progression of the disease.

Three Groups

Three groups of pulmonary function abnormalities have been described in sarcoidosis.[1]

In type 1 there is a reduction of all lung volumes with a normal residual volume to total lung capacity ratio. The index of intrapulmonary mixing is normal. The maximum breathing capacity is normal or slightly reduced. There is mild hyperventilation at rest and on recovery from exercise. The blood oxygen saturation is normal at rest and normal or slightly reduced after exercise. The diffusing capacity for oxygen is normal. The ventilation-perfusion relations are normal. There is mild pulmonary arterial hypertension.

In type 2 there is a reduction of lung volumes associated with disturbances in alveolar capillary gas exchange characteristic of the alveolar capillary block syndrome. The residual volume to total lung capacity ratio and index of intrapulmonary mixing are normal. The maximum breathing capacity is well maintained. There is marked hyperventilation at rest and during exercise. The blood oxygen saturation is normal or slightly reduced at rest with a considerable degree of oxygen unsaturation on exercise. There are variable disturbances in ventilation perfusion relationships. There is pulmonary hypertension.

The alveolar capillary block syndrome is characterized clinically by a chest x-ray which shows a diffuse nodular infiltration throughout both lung fields, dyspnea which becomes extreme on exertion, absence of airway obstruction, high maximum breathing capacity, reduced vital capacity and cyanosis not present at rest, but which develops after one minute of exercise. There is a low diffusing capacity for oxygen.

In type 3 the lung volumes are consistent with chronic pulmonary emphysema. There are significant disturbances in ventilation-perfusion relations and in the oxygen diffusing capacity of the lungs.

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*Assistant, Department of Medicine, Delaware Hospital.

In 1952 Riley and Hill[2] described three cases of sarcoidosis. They were unable to demonstrate any airway obstruction. They pointed out that the vital capacity is a consistent and sensitive guide to the progress of the pulmonary manifestations in sarcoid. The maximum breathing capacity parallels the vital capacity. The three cases presented had been treated with ACTH. The pulmonary function findings were given before and after treatment. They found that the maximal diffusing capacity was strikingly reduced and there was little change following ACTH treatment. The distribution of ventilation and circulation as indicated by the ratio of venous admixture to total blood flow was seriously impaired and response to treatment with ACTH was only moderately striking. The vital capacity, maximum breathing capacity, arterial Po_2 and chest x-ray all showed consistent and favorable changes after treatment with ACTH. In these three cases there was relapse after cessation of ACTH. They thought, since the maximal diffusing capacity changes little after ACTH therapy while the x-ray shows a striking decrease in infiltration, that the functional damage to the diffusing surface is irreversible and not affected by a change in the size of the sarcoid nodules. The sarcoid nodule apparently destroys alveolar capillaries which do not regenerate when the nodule shrinks. The changes in pulmonary function which result from steroid therapy are apparently related to the degree of resolution of the granulomas and to the extent of the resulting fibrosis. The arterial Po_2 must be interperted in terms of overall functional integrity rather than specific physiological factors. The arterial Po_2 is a resultant of numerous factors such as ventilation, distribution, diffusion and circulation.

Treatment With Cortisone And ACTH

Stone et al[3] described three groups of cases treated with cortisone and ACTH. The one group, consisting of nine cases, included patients with recent onset of acute symptoms. In this group the vital capacity and total lung capacity were significantly reduced in eight cases. The residual volume was normal or low. There was no emphysema. There was no bronchial obstruction except one case with bronchial involvement. The maximum breathing capacity showed no constant trend. There was hyperventilation at rest, no exercise and no recovery. In five cases there was impaired gas exchange. Four had a slight decrease in oxygen saturation with exercise. One had marked unsaturation at rest and with exercise due to an associated alveolar capillary block. In this group two cases were restored to normal. There was partial improvement in one and most became functionally worse following treatment. They thought that cortisone accelerated the development of pulmonary fibrosis. They suggested that patients with pre-existing evidence of fibrosis, such as reduced lung volumes, do not benefit from cortisone treatment.

Similar To Spontaneous Healing

Siltzbach[4] has shown that after treatment with ACTH or cortisone the changes are similar to spontaneous healing in a sarcoid lesion. He suggested that we must consider the pulmonary function studies in sarcoid or one can be seriously misled by x-ray changes. Steroid treatment produces initial clearing about the end of the second week of treatment, and it becomes maximal by the end of the fifth week. Cough disappears between the third and fourteenth days. Dyspnea is relieved by the third day. Dyspnea on exertion is relieved within one to twenty one days. Following treatment there was no recurrance of dyspnea in six patients observed three to seventeen months.[5] There is clearing in 64% of cases treated with ACTH or cortisone and in 44% of untreated cases.[6]

In Carr and Gages[7] series of 194 cases of sarcoidosis of all types, the survival rate for five years was 92% and for 10 years 80%. These are close to the survival rates of normal persons. There were 17 deaths in this series only three of which were due to progressive sarcoidosis and one death was from tuberculosis.

METHODS

The lung volumes, namely vital capacity, expiratory reserve, maximum breathing capacity and maximum expiratory flow rate, were recorded on the 13½ liter Collins spirometer. The spirometer has two motors, one of which turns the drum at a rate of 32 mm in 12 seconds. The lung volumes are measured with this speed. The fast motor turns the drum at a rate of 32 mm per second and the maximum expiratory flow rate is measured while the patient is expiring and the drum is rotating at this rate of speed.

The bronchodilator is Isuprel (1:200) and 1 c.c. is vaporized with continous oxygen flow into a plastic chamber from which the patient breathes through a one way valve so that he constantly inspires from the chamber and expires into the atmosphere. The oxygen flow is 2.5 liters/minute. Blood pressure and pulse rate are recorded before and after the administration of the bronchodilator.

The walking ventilation is determined by having the patient walk in the clinic hallway at a rate of 180 feet per minute and breathing from the atmosphere through a one way valve into a meteorlogical ballon. The expired air is collected and the volume measured in the Tissot gasometer. The patient walks 4 minutes. The first minute is a warm up period. During the second, third and fourth minutes the expired air is collected and then divided by 3 to obtain the minute walking ventilation. The patient's estimation of dyspnea after walking 4 minutes is recorded.

The residual volume is determined by the open circuit method with the patient inspiring from a continuous source of oxygen and expiring into the Tissot gasometer through a one way valve. After seven minutes of oxygen breathing, the connection to the Tissot is closed and a sample of alveolar air is immediately obtained. This sample of alveolar air is analyzed for nitrogen and the percent obtained represents the index of intrapulmonary mixing. The residual volume determination is performed three times and an average of the three values is reported. The results should agree within 200 c.c.

Rest And Exercise Tests

Rest and exercise tests are performed as follows: a Cournand needle is inserted into the brachial artery of the left arm. The patient sits in a chair and breathes room air through a one way valve so that the expired air is again collected in the Tissot gasometer. The resting ventilation is recorded for 3 minutes. During the second minute the resting arterial blood sample is taken. This sample is analyzed for oxygen, carbon dioxide and nitrogen content in a Scholander micro gas analyzer. The patient stands and performs an exercise for one minute. This consists of stepping up and back on a hospital foot stool at the rate of 30 steps per minute. During this exercise the patient's expired air is collected in a Douglass bag. Immediately at the end of the exercise the patient sits, the recovery air is collected in the Tissot and a sample of blood is taken. This blood is again analyzed. The exercise gases are analyzed as described under rest. The patient then breathes from a continuous supply of oxygen through a one way valve for 15 minutes. An arterial blood sample is again taken and analyzed as before.

ABBREVIATIONS

V.C.—vital capacity

M.E.F.R.—maximum expiratory flow rate

T.L.C.—total lung capacity

R.V.—residual volume

P.—predicted value

B.—before bronchodilator

A.—after bronchodilator

O.—observed value

R.Q.—respiratory quotient

I.I.P.M.—index of intrapulmonary mixing

CHART 1

CLINICAL SUMMARY
CASES OF SARCOIDOSIS

CASE	RACE	SEX	AGE	DURATION DISEASE (YEARS)	RADIOLOGIC FEATURES	RESPIRATORY SYMPTOMS	PERIOD OF TREATMENT (YEARS)	RESPONSE TO TREATMENT
1.	C	F	37	8	1951 - Bilateral hilar node and lung infiltration. 1954 - Tenting of diaphragm. 1959 - Fibrotic replacement and apical retraction.	1952 - Cough, dyspnea on exertion. 1955 - Dyspnea at rest. 1956 - URI. 1959 - Allergic rhinitis.	4	Metecorten 7-55 to 7-59. Well by May 1956. Now has slight cough.
2.	C	F	34	2	1957 - Bilateral lung mottling. 1958 - Clearing with residual fibrotic change.	1957 - Exertional dyspnea. 1959 - None.	1	Metecorten 9-57 to 7-58. Maximal improvement 10-57.
3.	W	M	34	4	1956 - Bilateral flocculent densities. 1959 - Considerable clearing with fibrous tissue replacement.	1955 - None 1959 - None	1/6	Asymptomatic. Metecorten 2 mos. 1956 associated with x-ray clearing.
4.	C	M	55	2	1957 - Right hilar enlargement with soft tissue extension. 1959 - Decrease right hilar density.	1957 - Right side pneumonia. 1959 - None	0	Asymptomatic.

Seven patients with suspected sarcoidosis have been followed in the Delaware Hospital Pulmonary Function Laboratory for periods ranging up to three years. Four patients (1, 2, 3, 4) have been shown to have sarcoidosis by lymph node or lung biopsy.

CHART 2

CLINICAL SUMMARY
ONE CASE OF TUBERCULOSIS AND TWO PROBABLE SARCOIDOSIS

CASE	RACE	SEX	AGE	KNOWN DURATION DISEASE (YEARS)	RADIOLOGIC FEATURES	RESPIRATORY SYMPTOMS	PERIOD OF TREATMENT (YEARS)	RESPONSE TO TREATMENT
5.	C	F	38	1/2	1959 Prominent hilar areas, diffuse haziness, increased broncho-vascular markings.	1959 Cough, tightness in chest.	0	------
6.	C	M	69	4	1955 Left lung has a mottled density with a right middle lobe density. 1959 No change.	1955 Dyspnea on exertion, choking sensation. 1959 Dyspnea, substernal crushing pain.	0	1955 Congestive failure. 1959 Acute pulmonary edema.
7.	C	M	48	3	1957 Bilateral hilar lymph node enlargement. 1958 Same.	1956 Cough and fever. 1959 Cough.	0	Less cough after excision of tracheal polyps.

Two cases (6, 7) have inconclusive biopsies with clinical conditions suggesting sarcoid. One case (5) had a positive lung biopsy for sarcoid, but eventually developed a positive culture for tuberculosis from the lung tissue obtained at biopsy.

LUNG VOLUMES																	
CASE	TIME OF STUDY	V.C. (CC)			3 SEC. V.C.			M.E.F.R. L/SEC.			T.L.C. (CC)		R.V. (CC)		R.V./T.L.C. %	
		P.	B.	A.	P.	B.	A.	P.	B.	A.	P.	O.	P.	O.	P.	O.
1	3-58	2960	1840		90	100										
	2-59	2940	1180		90	100		4-6	3.2							
	2-59										4250	2321	1310	1141	31	49
2	7-57	2949	1450	1589	90	100	100									
	11-57	2949	1770	1770	90	95	98									
	1-58	2940	1950		90	100										
	8-58	2910	2190		90	100										
	7-59	2930	2320		90			4-6	4.1							
	6-59										4060	3704	1130	1384	28	37
3	4-57	4331	5222		90	100										
	2-59	4410	5480		90	99		4-6	6.4							
	2-59										6650	6501	2240	1021	34	16
4	6-57	3666	2494	2140	90	84	94									
	12-58										5420	3993	1760	1499	33	38
	7-59	3630	3240	3060				4-6	4.6	5.3						
5	7-59	2845	935	1150				4-6	2.3	2.7						
	7-59										3960	1890	1115	955	28	50
6	5-59	3380	3250	2950				4-6	3.2	3.6						
	5-59										5600	5537	2220	2287	39	41
7	7-57	3691	2753	3717	90	76	76									
	5-58	3691	3555		90	73										
	8-58	3691	3350		90	73										
	11-58										5200	5462	1270	2630	24	48
	7-58	3650	3250	3300				4-6	1.8	2.0						

CHART 3

Three patients (1, 2, 3) were treated with meticorten for periods varying from 1/6 to 4 years. The patient (1) treated for 4 years has shown the most damage as seen by x-ray progression of fibrosis and decreasing lung volumes on pulmonary function tests. (see Charts 3 and 4).

VENTILATION										
CASE	TIME OF STUDY	M.B.C.(L.)			L./MIN./M^2 OF AIR FOR WALKING	WALKING INDEX NORMAL BELOW 0.25	SUBJECTIVE WALKING DYSPNEA	TIDAL AIR (C.C.)	EFFECTIVE PHYSIOLOGICAL DEAD SPACE (C.C.)	D.S. / T.A. (%)
		PRED.	BEFORE	AFTER						
1	3-13-58	91	94							
	2-4-59	90	63		10.5	0.27	NONE			
	4-22-59							270	146	54
2	7-10-57	94	89	87	5.5	0.1	3+			
	11-5-57	95	85	90	7.6	0.13	NONE			
	1-23-58	94	74		6.9	0.12	NONE			
	8-19-58	94	101		8.7	0.14	NONE			
	7-14-59	92	99		8.0	0.15	NONE	413		
3	4-18-57	140	182							
	2-3-59	138	147		9.0	0.12	NONE			
	4-1-59							830	213	26
4	6-25-57	98	75	103	4.2	0.09	1+			
	7-16-59	101	100	116	7.8	0.13	NONE	465		
5	7-22-59	87	44	42	15.9	0.59	2+			
	7-21-59							285	146	51
6	5-5-59	87	67	69	12.9	0.33	2+			
	6-9-59							632	322	51
7	7-5-57	108	87	80	4.5	0.09	1+			
	5-15-58	108	78		7.6	0.17	1+			
	8-5-58	84	71		8.2	0.20	1+			
	7-15-59	105	57	62	10.1	0.32	NONE	389		

CHART 4

Two patients (2, 3) were treated 1.0 year and 1/6 year respectively with meticorten. They have shown improvement in pulmonary function tests. The x-rays have shown clearing of the lung mottling and flocculent densities with residual fibrotic change. Patient No. 4 did not receive meticorten and has shown considerable improvement. (Chart 4)

The four cases of proven sarcoidosis show evidence of a restrictive type of lung disease with a considerably reduced vital capacity and a slightly reduced maximum

TRANSFER OF RESP. GASES, ALVEOLAR VENTILATION
AND INDEX OF INTRAPULMONARY MIXING

CASE	TIME OF STUDY	RESP. RATE	CO_2 OUTPUT CC/MIN/M^2		O_2 INTAKE CC/MIN/M^2		R. Q.		VENTILATION L/M^2		ALVEOLAR VENTILATION L/M^2	IIPM
		REST	REST	EX.	REST	EX.	REST	EX.	REST	EX.	REST	
1	4-59	28	95		118		0.8		4.7	11	1.6	1.29
2	7-59	24	130	243	128	339	1.02	0.72	6.0	7.9		
	6-59											1.25
3	2-59											1.69
	4-59	13	159	381	164	528	0.97	0.72	5.9	10	3.96	
4	12-58											1.45
	7-59	18	128	323	159	502	0.8	0.64	4.7	9.7		
5	7-59											1.04
	7-59	37	115	265	143	353	0.80	0.75	6.5	15.9	2.97	
6	5-59											1.75
	6-59	15	120		152		0.79		5.5		2.70	
7	11-58											3.28
	7-59	21	125	273	141	376	0.88	0.72	4.76	10.7		

CHART 5

breathing capacity. The maximum expiratory flow rate and the three second vital capacity are normal. The total lung capacity is reduced. The residual volume is normal. The residual volume to total lung capacity ratio is relatively normal.

Patient No. 5 has evidence of a restrictive and an obstructive type of disease with a maximum expiratory flow rate of 2.3 liters/second and a low maximum breathing capacity.

Patient No. 6 has mild bronchospasm with a maximum expiratory flow rate of 3.2 liters per second and a maximum breathing capacity of 67 liters per minute.

Patient No. 7 has findings which suggest the development of early emphysema. The residual volume is twice normal and the index of intrapulmonary mixing is quite high, indicating uneven distribution of gases within the lungs.

Patients 1, 5, and 6 all hyperventilate on walking as judged by the L./MIN./M^2 of air used to walk. It is interesting that patient No. 2 demonstrated improvement in vital capacity and maximum breathing capacity but increased the walking ventilation from 5.5 to 8.0 L./MIN./M^2 which suggests that other factors are tending to increase the work of breathing. The same trend occurred in patient No. 4.

The walking index is the number of liters of air used per minute in walking divided by the maximum breathing capacity and represents the per cent of the maximum breathing capacity used in walking. When subtracted from 100 we have the

ARTERIAL BLOOD STUDIES												
CASE	TIME OF STUDY	OXYGEN SATURATION % O_2 CONTENT+O_2 CAPACITY				CO_2 CONTENT VOL. %				P_{CO_2} M.M. H_g		PH
		PRED. REST	REST	EX.	O_2	PRED.	REST	EX.	O_2	PRED.	REST	REST
1	4-59	96	92	77		49	49	48		40	37	7.45
2	1-58	96	90	75		49	47	45	46	40		
3	4-59	96	96	91		49	50	50		40	35	7.50
4	1-59	96	92	88	100+ 0.05	49	50.4	50.3	49.8	40	36	7.48
5	7-59	96	92	81		49	39	38		40	30	7.45
6	6-59	96	85		100+ 1.5	49	47			40	39	7.40
7	5-58	96	80	81		49	44	44.9	45	40		

CHART 6

breathing reserve while walking. Normally the walking index is less than 0.25 or 25%.

All the patients were hyperventilating at rest (Chart 5). The resting ventilation should be 3.5 L./MIN./M^2.

The alveolar ventilation is normally 2.3 L./MIN./M^2. Patient No. 1 has a somewhat reduced value.

The respiratory rates are rapid.

The respiratory quotient (R.Q.) represents the carbon dioxide output divided by the oxygen consumption. The R.Q. is normally 0.8.

The increases in oxygen consumption on exercise in these patients indicate that the amount of exercise is sufficient. Since the amount of exercise has been uniform as judged by the oxygen consumption, we are able to compare the other values obtained on exercise from different patients and from the same patient at different times.

The measurements of oxygen saturation at rest and on exercise are similar in the four cases of sarcoidosis (Chart 6). They are all above 90% at rest. The marked drop in oxygen saturation on exercise suggests the presence of an alveolar capillary block. The drop from 96% to 91% in O.M. is the one test indicating the presence of an abnormality.

Patients No. 6 and 7 have very low oxygen saturations at rest which makes one think of other diseases than sarcoidosis.

Certainly they are not typical of the other cases of sarcoid in our series.

The P_{CO_2} in mm Hg demonstrates the absence of carbon dioxide retention in these cases.

SUMMARY

1. The typical pattern of pulmonary function tests in pulmonary sarcoidosis is reviewed.

2. The influence of ACTH and cortisone on pulmonary sarcoidosis and accompanying pulmonary function tests is reviewed.

3. Seven cases of suspected pulmonary carcoidosis are presented with emphasis on the pulmonary function tests. The four proven cases of sarcoidosis presented here display a pattern of pulmonary function compatible with other presentations in the literature.

4. The remaining three cases deviate from the typical pattern of sarcoidosis. The pulmonary function tests in these three cases present variations which make one question the validity of the diagnosis of sarcoidosis.

5. Serial pulmonary function tests present a quantative measure of the progress of the disease and effect of therapy.

6. The effect of steroid therapy is discussed. Long term therapy may be harmful in this disease.

ACKNOWLEDGEMENT

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Contributors Column

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MEATAL STENOSIS

AN EASILY DIAGNOSED BUT FREQUENTLY MISSED UROLOGIC DISEASE IN CHILDREN

● **Urethral meatal stenosis is a relatively simple condition that can be cured by a simple surgical procedure. As is true in so many conditions, it must be considered as a possibility if the diagnosis and successful treatment is to be accomplished.**

L. William Ferris, M.D.*

Urethral meatal stenosis in male children and adults is a frequently overlooked and easily treated urologic lesion with serious aftermath, if allowed to persist untreated. Although all obstructive lesions of the genitourinary tract are important, there is none more easily diagnosed or treated than urethral meatal stenosis in the male. A similar lesion occurs in the female; however, it is less easily diagnosed and treated.

All genitourinary lower tract obstructive lesions lead inevitably to the same pathologic consequences, and they share the same symptomatology. The increased hydrostatic pressure proximal to the area of obstruction causes dilation and thinning of the urethra which, if severe, may progress to the formation of diverticuli with subsequent rupture and extravasation of urine.

The bladder responds to the stress of obstruction initially by hypertrophy. As its capacity for hypertrophy is reached, dilatation occurs, and eventually the point is reached where its contractile power is impaired. It is unable to empty completely, and residual urine with stasis and infection is the result.

The upper urinary tract is not involved early as a rule, but with progressively severe obstruction the physiologic "ureterovesical valve" becomes forced open, allowing transmission of increased pressure and reflux of infected urine up the ureter. This increased pressure may be transmitted to the kidney itself with the development of a hydronephrosis and pyelonephritis, and resultant permanent damage to the renal parenchyma.

Enuresis Complaint Misleading

Fortunately, most patients with meatal stenosis are seen before the stage of hydronephrosis is reached. Unfortunately, however, many have existed for years before diagnosis is made. This situation appears to be due to the fact that a careful history

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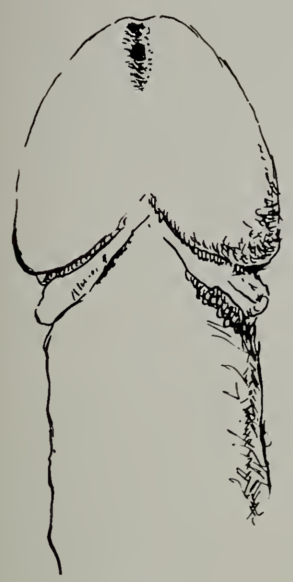

Figure 1

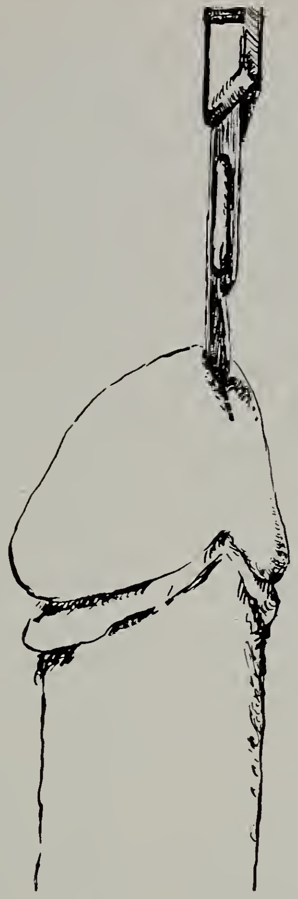

Figure 2
(*oblique*)

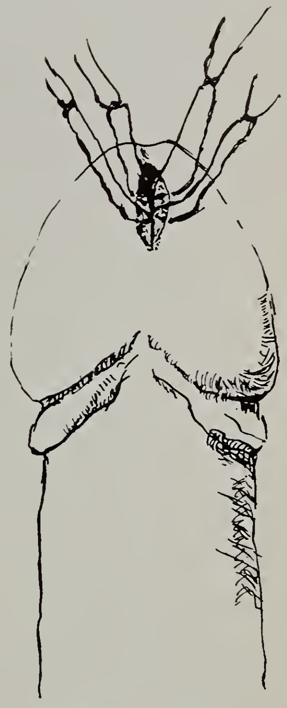

Figure 3

is not taken, and infection does not occur until late in the course of the disease. Many of these children have been seen at least once for the chief complaint of enuresis before the diagnosis is finally made. Because the urinalysis is normal, these children are frequently labeled emotional bedwetters.

The parents have often noted only the presence of bedwetting, which is impressive and annoying because of the wet bedclothes, and this completely overshadows the other symptoms. These must be brought out by direct questioning, as a rule. Since the urinalysis is normal until late in the progression of these obstructive lesions, the history is all-important in early diagnosis. These symptoms are common to all lower urinary tract obstructive lesions, and are much more reliable than laboratory data.

Frequency during the daytime is usually marked. Often the child voids every two or three hours, but in most cases over six times a day. Enuresis and waking at night to void are persistent with one or several episodes during the night. These symptoms persist in spite of withholding fluids.

Urgency is often present, but not necessarily so.

Obvious straining, with or without a narrow stream, is common.

Interrupted stream is an early sign of bladder decompensation. This occurs when the stream is stopped for a few seconds durthe act of micturition. This interruption represents bladder rest.

Double voiding is a rather late symptom which usually follows interrupted stream in its appearance, i.e., the child, after voiding is over, must void again a few minutes later. This represents residual urine which he is able to void only after the bladder rests.

Dysuria is not frequently noted until the infected stage is reached.

Suprapubic pain may or may not be present, and it is not a reliable sign.

These symptoms are the same for any obstructive lesion in adults or children, and should lead to the investigation of the lower urinary tract in all cases where they exist.

Meatal stenosis is one of the commonest of these lesions, and all that is needed for diagnosis is examination. The meatal dimple is frequently normal in appearance; however, the actual lumen, upon spreading the meatus, is pinpoint in size, and is obviously small. The importance of spreading the meatal dimple cannot be over emphasized, as the dimple is usually normal in appearance, but the actual lumen of the terminal end of the urethra may be narrow. The inspection of the meatus should be a part of every routine physical examination in the male, whether symptoms are present or not.

Treatment Simple

The treatment of these lesions is simple, and can be done wherever the equipment for repair of minor laceration is available. The glans is first prepared by washing with pHisohex and water, and draped with a sterile sheet. A small amount of anesthetic jelly is then introduced about one-half centimeter into the urethra. After a few minutes, a local anesthetic can be introduced through the urethra into the periurethral tissues with a #24 or #25 needle; ½ cc. is usually enough. A scalpel blade is then inserted into the urethra and drawn ventrally, creating a slit continuous with the urethra, enlarging it in a ventral direction. (Figs. 1 and 2). The urethra and epithelium of the glans are then approximated to cover the denuded surface with three or four plain catgut sutures of #0000 or #00000. (Fig. 3). This prevents healing across of the meatotomy incision. The parents should be instructed to spread the incision daily and to give the child warm baths twice daily for comfort and local hygiene. No dressing, salves or ointments are applied. The child should be seen in four to seven days to check the meatus, since if healing has begun, at this point the incision can be dilated and separated without difficulty.

Relief of symptoms is usually dramatic and apparent in from five to seven days. Of course if symptoms are not relieved in a week or two, complete urologic examinations should be done. It does not appear to be necessary to investigate further if meatotomy results in a normal voiding pattern and sterile urine.

In the last two months, sixteen male children have been seen and treated in the Urology Clinic at the Delaware Hospital for urethral meatal stenosis. None of these children had infection, and all were referred because of bedwetting or daytime frequency by their local doctors, the parents themselves, or by the school nurse, who found that the extreme daytime frequency was interfering with school work. In these sixteen cases there was one recurrence which was felt to be due to the parents' failure to spread the incision daily. This was corrected at the seventh day followup visit.

Condition Often Familial

This lesion is often familial, and questioning the parents may reveal siblings with the same symptoms to a greater or lesser degree. It is felt that regardless of symptoms, where this lesion occurs in one child, all male siblings should be examined. The following case report illustrates rather dramatically the results of such routine questioning at examination.

Case Report

The patient, a five year old boy, was referred to the Urology Clinic from the Pediatric Clinic with the following history:

Chief complaint was that of frequency of urination. He was bladder trained at the age of two, and had had normal bowel training with control complete at the age of two, according to the mother. From that time on the parents had noted frequency, which occurred about every forty-five minutes. He had always wet the bed at night. The symptoms had remained stable and had persisted with about the same amount of frequency until he was seen in Urology Clinic. Additional symptoms which had been noted, but which were learned only as a result of direct questioning, were urgency, interrupted stream, and double voiding, since about the age of three. There was no history of urinary tract infection, or of suprapubic pain. In spite of the fact that the parents awakened the child during the night, the child persisted in wetting the bed. Water restriction after 6:00 P.M. was tried, but this also met with failure, forcing the parents to seek medical attention. On questioning the mother about siblings, there were three brothers, all of whom had the same problem of enuresis and daytime frequency. The father and mother had a normal voiding pattern.

The past history was negative. The physical examination was unremarkable except for a very tight meatal stenosis, which was obvious on examination after spreading the meatal dimple. Blood urea nitrogen and urinalysis were normal; the urine culture was sterile. Cystoscopy was performed on this child because of the long duration of symptoms and the history of double voiding; moderate trabeculation was found as the only abnormality. There were no congenital valves or ureteroceles noted; there was no urethral stricture above the meatus.

Meatotomy was performed in the previously described manner, and the child was given an appointment to return in one week. The mother was instructed to spread the meatus daily, and to give the child two hot baths daily. When the child returned in a week, the meatus was found to be adherent across the meatotomy incision, due to the mother's failure to separate the incision daily. For this reason, the child was seen again in three days, the meatus again dilated. Ten days following meatotomy the voiding pattern revealed no nocturia or enuresis, in spite of the absence of restriction of fluid intake at night, and the daytime frequency was not more than four to five times daily. There was no interrupted stream, and double voiding had ceased.

Similar Lesions In Siblings

The eight year old sibling was examined, and the history revealed enuresis of approximately six to eight months' duration, with daytime frequency of approximately every half to three-quarters of an hour, which had begun within the last year and and a half. The urinalysis report was negative for albumin, white cells or red cells, and the culture was sterile. The physical examination revealed a lesion identical to the first case, with a very narrow urethral meatus. This was corrected by meatotomy under local anesthesia, without cystoscopy. On followup visit one week later, there was marked improvement, with no enuresis, a normal voiding pattern of from four to six times daily, and with no double voiding or straining.

The third boy in this family was examined at the age of four years. He had had daytime frequency or every fifteen minutes to every half hour, with straining, interrupted stream; bedwetting had occurred every night since the stage of bladder training. Meatotomy was done under local anesthesia, and one week following this there was marked improvement, with no enuresis, no double voiding or straining, and a daytime frequency of from three to five times.

The fourth child in this family was five years old, with a similar complaint of enuresis since the stage of bladder training, and daytime frequency of every one to three hours. The physical findings and urinalysis reports were identical to those of the other three siblings, and meatotomy was done under local anesthesia. One week post-operative his symptoms were completely relieved.

Successful Results

These patients have been followed for approximately six weeks, and they all have normal voiding pattern, with no enuresis.

It is difficult to understand how the parents of these children allowed them to go on with symptoms of such a severe degree for so long a time, without seeking medical attention. However, all of these children had been seen at various times, and all had been given at least one or two physical examinations without these lesions being observed. There have been numerous other instances illustrating the familial incidence of meatal stricture, with combinations of two siblings, or father and son. Occasionally the father may recognize the same symptoms in the child, when diagnosis is established in himself.

There have been numerous case reports wherein an adult patient presenting with lower urinary tract obstructive diesase identical with that of hypertrophy of the prostate has been found on urologic examination to have hydronephrosis, chronic cystitis, pyelonephritis, and mildly to moderately decompensated kidneys, with bladder trabeculi; the sole urologic lesion on complete genitourinary investigation was found to be meatal stenosis. A careful history of the voiding pattern in the majority of these cases has revealed that these abnormal symptoms have been present for many years, frequently for as long as the patient can remember, and through several physical examinations.

Conclusion

There are few lesions of functional importance that are more easily diagnosed and treated than urethral meatal stenosis in the male, and none should go unrecognized after physical examination. The results of neglect of meatal stenosis are serious damage to the entire urinary tract, with irreversible damage to the kidneys if allowed to progress in its severe form. The diagnosis is easily made, and the treatment is a simple office procedure, with a very minimal recurrence rate, and with virtually no complications.

It is important to follow these children postoperatively to see that the voiding pattern has become normal, and that any existing urinary tract infection is eradicated. If this has not occurred, a more complete evaluation of the genitourinary system should be done, with cystoscopy and excretory urograms, to aid in the discovery of other lesions such a ureterocele, and anterior or posterior urethral valves. Because of the high familial incidence of meatal stenosis, all siblings should be examined when the lesion is found in one child. The presence of a normal urinalysis report is more common than not in these children, and should not lead to the diagnosis of emotional enuresis.

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HEARD AT THE 1960 A.N.A. CONVENTION

Voicing a protest against what they considered unfair attitudes on the part of the medical profession, delegates to the A.N.A. adopted a legislative report that strongly criticized the American Medical Association and individual physicians for their efforts to alter the American Nurses Association's support of the Forand bill:

"Physicians . . . have implied that nurses cannot make an intelligent decision about a social issue . . . (the A.M.A.) has taken advantage of the close working relationship between members of the two professions and the concept that this relationship is that of master and servant still appears to persist in the thinking and attitudes of many doctors." (*Supplemental Report of the Committee on Legislation*). R. N., July, 1960.

THE RAT OVARY HYPEREMIA PREGNANCY TEST

A CLINICAL LABORATORY CORRELATION

● **The desirability of having a simple but accurate test for pregnancy is obvious. The favorable and unfavorable aspects of the rat ovary hyperemia test are discussed.**

*John M. Levinson, M.D.

**Edwin M. Richardson, Ph.D.

Ordinarily the diagnosis of pregnancy offers little or no difficulty and the patient is usually aware of her true condition before she consults the physician. In a small number of cases, however, the diagnosis is not easy despite all the known methods at our command. Confusion may occur particularly in the first few months of pregnancy when the uterus is a pelvic organ, in patients with pelvic tumors, or those with abnormal signs and symptoms. For this reason, as well as to establish an early diagnosis in the apprehensive patient or the patient with a problem of infertility, a reliable laboratory test is needed. For the last four and one-half years the rat ovary hyperemia test for pregnancy has been the method principally employed in the laboratory of the Delaware Hospital. This test is based upon the hyperemic response of the rat ovary to chorionic gonadotrophin in the test serum which is a reflection of early trophoblastic activity in pregnancy. The advantages claimed for this technique are: ease and speed of performance, sensitivity, saving in cost of the test animals, and saving in space required for housing them. A disadvantage is the greater experience required for reading the result.[1] The purpose of this paper is to determine the accuracy of the method in this laboratory by correlating the results with the clinical findings.

Method

One cc. of serum was injected intraperitoneally into each of two immature female rats of Wistar or Holtzman strain, 26-32 days old, weighing 40-60 grams and having the vagina still closed. After 14-20 hours, the rats were killed with ether, and the ovaries examined. If at least two ovaries showed a definite diffuse reddening, the test was reported positive. If only one ovary appeared slightly hyperemic, the test was reported doubtful, and was

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Table I

Clinical Diagnosis	*Number of Tests*	*Positive ROH*	*Negative ROH*
Intrauterine pregnancy	52	48 (2 weakly positive)	4
Pseudocyesis	2	2	0
Unruptured ectopic pregnancy	2	2	0
Ruptured ectopic pregnancy	2	0	2
Ovarian dysfunction	25	1 weakly positive	24
Incomplete abortion	5	0	5
Normal-patient post hydatidiform mole	5	0	5
Myoma uteri	5	0	5
Cervical stenosis with amenorrhea	1	0	1
Ovarian cyst	2	0	2
Total	101	53	48

repeated, preferably after waiting a few days.

Material

One hundred and five consecutive rat ovary hyperemia (ROH) tests were performed on ninety-four patients from the private practice of one of the authors, during almost a three year period. Clinical follow-up was not available on four tests, and therefore these were excluded from the analysis. All other tests have been verified by complete follow-up of the patient with definitive clinical diagnoses.

Results And Discussion

The results are shown in Table I.

False Positive Reactions

There were three false positives. One patient had hypomenorrhea with equivocal symptoms of pregnancy and an ROH test was reported as "weakly positive—suggest repeat." An ROH test repeated in 48 hours was negative. The clinical diagnosis was ovarian dysfunction.

The other two cases were of patients with pseudocyesis. One patient with a false positive test was a diabetic, gravida I, para O, with great anxiety about becoming pregnant. She was amenorrheic for 4½ months before resuming normal menstrual function. Most of the early signs and symptoms of pregnancy except uterine enlargement were present.

The other patient was a multigravida with a long and difficult obstetrical history. A positive ROH test was obtained, the patient having amenorrhea and signs and symptoms of pregnancy. Following several weeks of amenorrhea, irregular and heavy bleeding ensued and a D & C was done, disclosing secretory endometrium.

The erroneous test results on the second and third patients were probably due to the prolonged corpus lutem function which occurs in pseudocyesis. In occasional cases such as this, the pregnancy test may be weakly positive, suggesting that there is an excessive production of luteinizing gonadotrophic hormone in this disorder.[2] Since laboratory tests may give erroneous results, the diagnosis in the case of these patients must be made on the basis of clinical findings.

False Negatives

There were four false negatives. The first patient in this group was approximately 28 days past an expected menstrual period when the false negative ROH test was obtained. A test repeated 4 weeks later was strongly positive and the patient's pregnancy progressed uneventually to term. Two other patients were 7 and 33 days past the expected time of menstrual flow, and had false negative ROH tests. Both of these patients had uneventful pregnancies. The fourth patient in this group had a weak positive test four days after missing an expected menstrual period and a negative test three days later. During the time of testing she had vaginal bleeding and was considered a threatened abortion. This patient is now 7 months pregnant and her course has been uneventful since this occurence.

Avoidable Inaccuracy

The inaccuracy of two of the four tests here might have been avoided by the use of a pituitary synergistic reagent as described by Rakoff.[3] This reagent, which has been used to heighten the ovarian hyperemic response particularly when testing patients who are only a few days past an expected menstrual period, has generally increased the accuracy of the test. This is the time when a false negative is most likely to occur. Many authors state that a pregnancy test may be inaccurate in the first two weeks following the missed menstrual period and that a negative result at this time carries little value. Nevertheless one patient only 2½ days past an expected menstrual flow, had a strongly positive test and carried a pregnancy to term. In addition, two unruptured ectopic pregnancies were reported as positive, one test being done when the patient was only 10 days past an expected menstrual period. Later, one of these ectopic pregnancies ruptured. At this time the test was negative. The other negative ROH test was in a patient with a ruptured ectopic pregnancy and the results agreed with the clinical findings at that time.

Although this test is performed in many laboratories by the injection of urine intraperitoneally, it is considered more accurate to use serum. This is based on the work of Foote and Jones[4] who have found that the level of chorionic gonadotrophin roughly parallels that of the serum. These authors state that in their experience no pregnancy test based upon urinary excretion of chorionic gonadotrophin approaches those based upon blood serum concentration in accuracy or sensitivity.

Reading Of The Test Important

Any biologic test may be subject to a number of errors. Reading the test is one of the possible sources of error. In a good light, a positive test shows a distinct line of demarcation between the uniformly diffuse red of the ovary and the pink of the fimbriated portion of the fallopian tube. The difference of sensitivity in individual rats, probably related to endogenous follicle stimulating hormone (FSH) production is another uncontrolled factor. Fried and Rakoff reported a decrease in the number of false negatives, and a sharpening of the end point of the 2-3 hour urine test by use of the FSH synergist.

The performance of the test by a number of different technicians could have contributed to errors due to inexperience in reading the result, or to injection of animals that were too young, and therefore less sensitive, or too old, with the possibility of a false positive due to endogenous production of luteinizing hormone (LH). Careful attention to these sources of error should improve the accuracy of the test.

Summary

1. The results of 105 consecutive ROH pregnancy tests were correlated with the clinical findings. In 101 tests, accurate clinical follow-up was available. Out of these, 94 were correct, showing an accuracy of 93.1%.

2. The sources of error of the method in our hands have been discussed.

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● The number of agents formerly recommended for treatment of the Stokes-Adams syndrome is evidence of their general inadequacy. The use of the cardiac pacemaker attached to an internal electrode is the first major breakthrough in the management of this fatal condition.

RECENT ADVANCES IN THE THERAP

R. A. Kahlbaugh, M.D.*
J. Richard Durham, M.D.**

The Stokes-Adams syndrome, cerebral ischemia associated with complete heart block and idioventricular rhythm due to asystole or extreme bradycardia, remains a therapeutic problem despite the availability of many therapeutic agents. The sympathomimetic amines have been used most commonly and continue to maintain an important place in the therapeutic regimen. Isopropylarterenol, ephedrine sulfate and epinephrine are many times effective in preventing Stokes-Adams attacks in patients with complete heart block. Bellet[1,2] has reported good results, with conversion to normal sinus rhythm, from the use of sodium lactate intravenously. Others have not had similar success with this agent. Recently Friedberg[4] has reported successful termination of Stokes-Adams attacks and prevention of further episodes with prednisone or hydrocortisone. Many times steroids had to be continued for prolonged periods, and in one case at a dosage of 60 mgms. a day.

Not A Common Phenomenon

Dosage dependency, however, is not a common phenomenon in the therapy of this syndrome. Chlorothiazide or hydrochlorothiazide in addition to steroids may be helpful. The action of these latter agents is probably due to reduction of serum potassium levels. Some authors, however, suggest that the anti-inflammatory effect of the steroids is their mechanism of action. Zoll et al[5,6,7] have reported extremely good results with the external conventional pacemaker. We have not experienced similar good results in a much smaller number of cases. The muscular contraction of the chest wall and chest pain produced have severely limited its use in our hands. In spite of this varied list of therapeutic agents, none is uniformly effective.

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ES-ADAMS SYNDROME

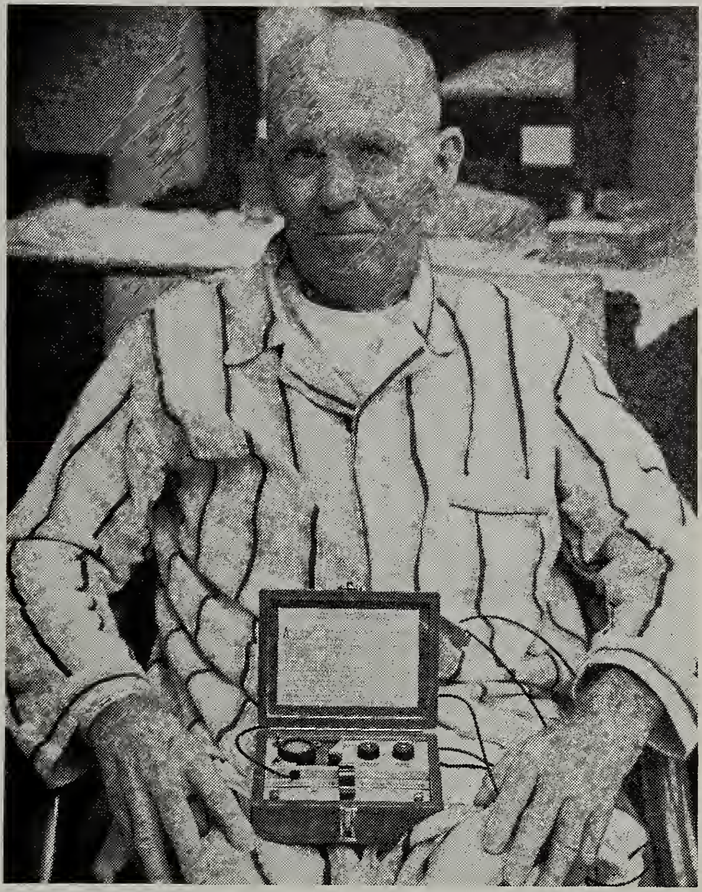


Figure No. 1 — Patient with intracardiac electrode in place connected to the Atronic pacemaker.

Recently Atronic Products, Inc.,* has produced a small portable internal pacemaker which we have had occasion to use in one patient with complete heart block and Stokes-Adams syndrome.

The Atronic Pacemaker

The Atronic pacemaker (Fig. 1) is a compact 5½"x4½"x1¾" unit weighing approximately two pounds which supplies extraneous cardiac stimulation by direct application of the electrical stimulus to the myocardium. The current delivered may be set from 0 to 24 milliamperes, and the rate of stimulation can be set between 25 and 120 per minute. The pacemaker operates immediately without requiring time for warming up. It is powered by two batteries which will last an average of six months of continuous use. A galvanometer is present which registers impulse rate when the switch is on "stimulate;" or the impedence to flow of electrical current when the switch is so set. All control knobs are protected by the outer case and cover so that the settings cannot be disturbed accidentally. The patient lead is permanently attached to the unit and is attached to the stimulating electrode and the indifferent electrode by a jack which can be disconnected.

Methods

Methods of introducing the intracardiac electrode.

(A) A flexible, tempered, insulated stainless steel wire is enclosed in a stainless steel tube. This passes through a 16 gauge hypodermic needle through which the wire is pushed into the myocardium. Overpenetration is prevented by a stop on the wire. The needle and tube are retracted over the wire. The intracardiac electrode is negative and has a white marker. The positive electrode is attached to the skin or imbedded subcutaneously.

More recently a flexible stranded steel wire has been used which may be threaded through a 20 gage spinal needle into the myocardium.

(B) The wire electrode may be sewn directly into the heart muscle via a small thoracotomy.

(C) Direct placement of the electrode is also possible via a #6 cardiac catheter inserted through the right jugular vein and placed into the cavity of the right ventricle. (Fig. 2)

Each of these methods has its advantages and disadvantages. Application through a needle transthoracically is easy and can be done quickly in an emergency. Placement in the ventricular wall may be technically difficult, but with the switch on impedence, a sharp decrease in deflection is observed when the electrode is properly placed. The disadvantages of this method are (1) the possibility of the electrode becoming displaced; (2) the possibility of infection; (3) the possibility of hemorrhage; and (4) the inevitable fibrosis about the electrode resulting in loss of capture.

Direct Placement

The direct placement via thoracotomy has the advantages of placement under direct vision and suturing the electrode in position. The disadvantages are that it requires major surgery and that fibrosis with ensuing loss of capture will occur, necessitating replacement.

Major Disadvantages Of This Simple Procedure

Placement in the lumen of the right ventricle via right jugular catheterization is a relatively simple procedure in experienced hands and precludes the fibrosis which

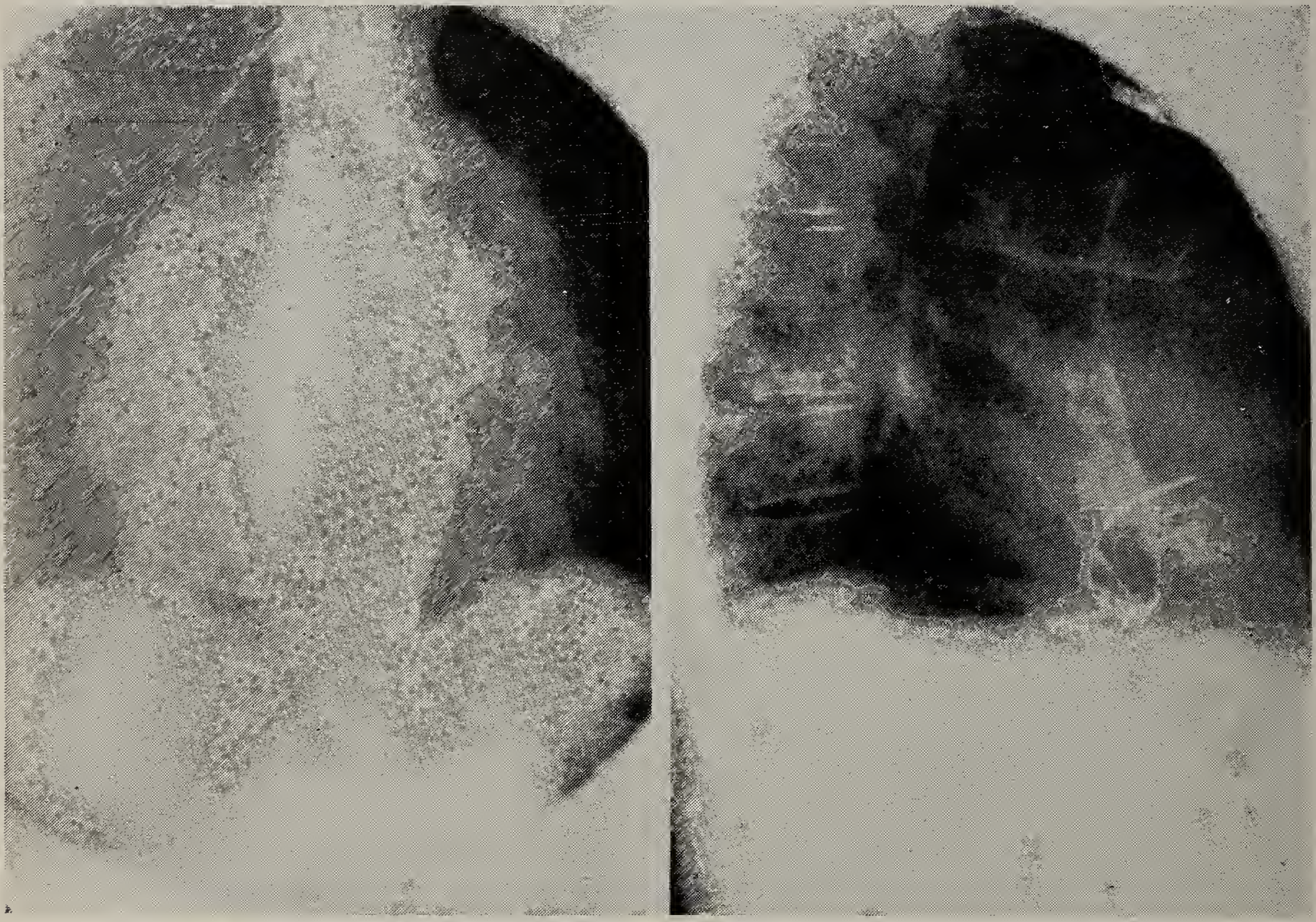
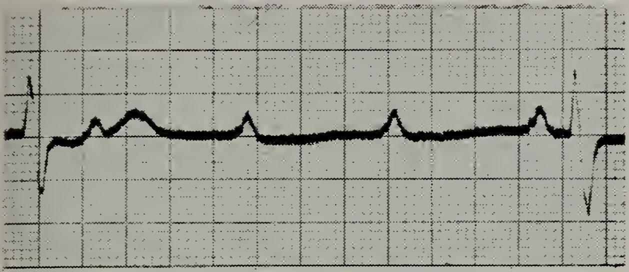
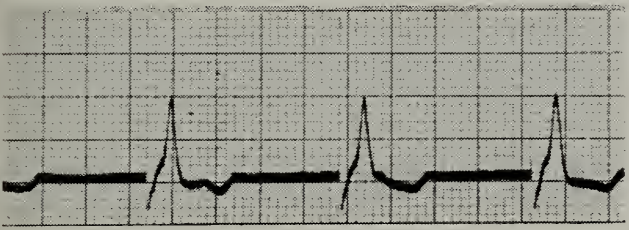


Figure No. 2 — Intracardiac electrode placed in the chamber of the right ventricle by insertion of a cardiac catheter through the right jugular vein.

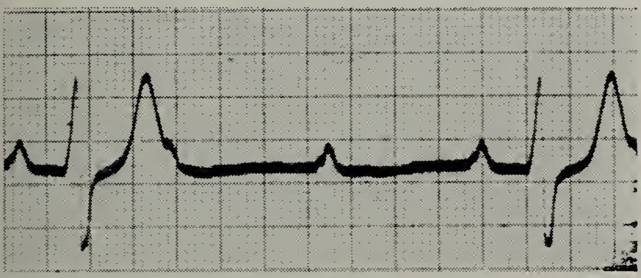
Figure No. 3



A — Before pacemaker



B — With pacemaker



C — After pacemaker

limits the duration of effectiveness with placement in the ventricular wall. The major disadvantage is that continuous anticoagulation with all of its inherent hazards is necessitated.

The method of application will obviously depend on the facilities at hand and the status of the patient.

Case Report

A 56 year old mechanic, was admitted to the Delaware Hospital February 16, 1960, for therapy of Stokes-Adams syndrome. He first showed a slow heart rate in September, 1959, and his electrocardiogram revealed first and second degree heart block. On several occasions he had syncopal attacks without warning. On January 4th he was hospitalized following two syncopal attacks. At this time the electrocardiogram revealed complete heart block which had persisted to date in spite of the use of sympathomimetic amines and steroids.

Medical History

There was no known heart disease; specifically, there was no history of angina or rheumatic fever.

The patient was a healthy white man in no acute distress but frightened by syncopal attacks which were often accompanied by vomiting and loss of sphincter control. His pulse was irregular; the rate was 22 per minute. His blood pressure was 175/60. Auricular contractions were audible as was a bruit de canon. No murmurs or rubs were present. Otherwise, complete physical examination revealed no abnormalities.

Laboratory studies, including plasma chlorides, serum sodium, and serum potassium, were normal.

The electrocardiogram showed complete heart block with a ventricular rate of 20 per minute. (Fig 3-A) The patient was given intravenous molar lactate as well as isopropylarterenol, epinephrine and ephedrine with no response. He was then given cortisone, 200 mgm. daily, without effect. The external conventional pacemaker was tried but could not be tolerated because of chest wall shock and pain. Thyroid was added to the above program without benefit.

On February 26th the Atronic internal pacemaker was obtained and the intracardiac electrode was inserted* under local anesthesia into the right ventricular wall transthoracically through the specially designed needle described previously. The needle was passed in the fourth left intercostal space at the midclavicular line.

The patient's heart rate was controlled with the pacemaker at 50-60 per minute. On 2-28-60 capture was lost and the electrode was replaced in the myocardium. Subsequent ECGs showed second degree heart block with 3:1 A-V conduction and a ventricular rate of 30 per minute without the pacemaker. (Fig. 3-C) With the pacemaker in operation, the rate was controlled at 50-60 per minute. (Fig. 3-B)

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Over the ensuing weeks in the hospital, the patient returned to second degree block with varying 2:1 and 3:1 A-V conduction and a ventricular rate of 36-40 per minute.

The patient was discharged on March 19th with the intracardiac electrode in place and his family instructed in the use of the Atronic pacemaker.

The patient went four weeks after discharge without a Stokes-Adams attack. Following this he was off the pacemaker for periods of two to three days without syncope and his rhythm was second degree heart block with 2:1 A-V conduction and a ventricular rate of 40 per minute. The intracardiac electrode has now been removed with no syncope to date. In this case the intracardiac pacemaker maintained a cardiac rate and output sufficient to supply adequate cerebral blood flow until the patient's A-V conduction improved enough to maintain adequate blood flow to vital organs.

DISCUSSION

The treatment of the Stokes-Adams syndrome has been ineffective in our hands in the past in spite of a variety of therapeutic agents. While others have reported good results with sympathomimetic amines, molar sodium lactate, steroids, and the conventional external pacemaker, none has been uniformly effective.

Recently a small portable intracardiac pacemaker has been devised. The intracardiac electrode may be inserted into the myocardium transthoracically through a large needle; or may be placed into the chamber of the right ventricle via right jugular catheterization; or may be sewn into the ventricular wall via thoracotomy. For long term use, insertion on a catheter into the right ventricular chamber is the most efficacious. One case to our knowledge has gone at least ten months with good capture with this method of insertion. However, this method requires continuous anticoagulation.

Bellet[3] has reported four cases of Stokes-Adams syndrome in which the intracardiac pacemaker was used. In two of these patients the results were good. In the other two, permanent cerebral damages had occurred prior to the use of the intracardiac pacemaker, and the patients succumbed although successful cardiac stimulation was obtained in both instances. This stresses the importance of prompt initiation of therapy in Stokes-Adams syndrome.

SUMMARY

A case is presented of Stokes-Adams syndrome successfully treated with the intracardiac pacemaker. In this case the intracardiac electrode was inserted transthoracically via a 16 gauge needle under local anesthesia. There were no untoward effects from the procedure. Capture was maintained except for a short period when the electrode had come out of the myocardium and had to be reinserted. The patient's family was instructed in the operation of the pacemaker, and the patient was discharged, improved, to be followed by his family physician.

CONCLUSION

The indication for use of the intracardiac pacemaker in complete heart block is the presence of the Stokes-Adams syndrome in which drug therapy and external electrical stimulation have failed.

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PUNCH PLEURAL BIOPSY

● **Pleural biopsy is commonly done under direct vision in the operating room and under "indirect vision" at the patient's bedside. In this country the Vim Silverman needle has been used extensively. The author presents the 'punch pleural biopsy' technique as yielding a more adequate specimen which carries with it no increased risk.**

Charles A. R. Skowron, M.D.*

Pleural biopsy is valuable as an aid in the diagnosis of certain intrathoracic pathology in which pleural effusion is present.[2,3] To have no positive diagnosis, but to prescribe for the patient along the suspected diagnostic impression has had unfortunate results. Much help has come from the use of the needle biopsy.[3,4] The purpose here is to present a simple method of pleural biopsy in wihch the specimen yield is greater and more adequate than previous methods.

Materials And Techniques

Thoracentesis tray

Wide blade scalpel

Kerrison rongeur (Figure 1)

The patient is premedicated with a barbiturate. The biopsy site has previously been determined by clinical examination, x-ray, and fluoroscopy. The patient is comfortably adjusted in the sitting position, feet over the side of the bed resting on a stool or chair, and the arms permitted to support and balance the patient by resting on an over-bed table. The chest wall is prepared with Merthiolate and alcohol and 1% procaine anesthesia is used. A two inch #15 guage needle on a 2 cc. syringe is introduced into the pleural cavity over the upper margin of the rib, avoiding vessels and nerves by keeping away from the upper part of the interspace. Introduction of a needle is done to be sure that the biopsy will be taken from a site where free pleural fluid is present. With needle in place a

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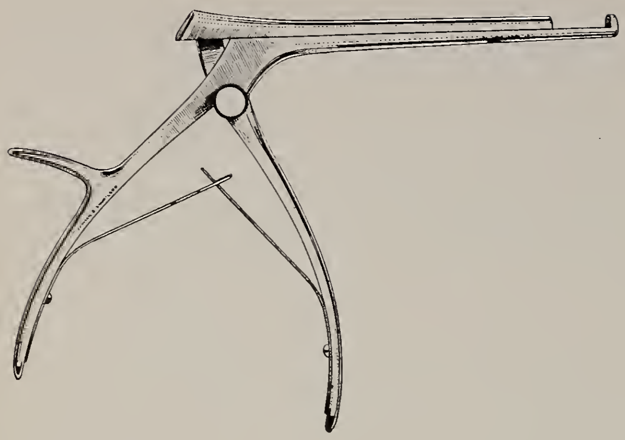

KERRISON RONGEUR

Figure 1

stab incision with a wide blade scalpel is made against the needle into the pleural space; no deeper. The incision should be about ⅜" long—only large enough to admit the Kerrison rongeur — keeping an air tight, water tight fit. The needle and scalpel are withdrawn. Immediately the rongeurs are inserted in a closed position felt to go past the upper edge of the rib just into the pleural space. The rongeur is permitted to open about one quarter inch and pressure is exerted with the rongeur in the direction of its biting lips. The rongeur is directed parallel to the rib and not toward the rib above. It is gently withdrawn until it is felt to engage the pleura. The rongeurs are closed, held in place for a few moments, and the specimen is then withdrawn. If desired, three or four specimens may be obtained.

The instrument is operated with one hand while the other is free to pinch the chest wall tissues together momentarily after removal of the specimen. Light pressure dressing is then applied.

Discussion

The specimens obtained for examination by the pathologist are much larger, being 4 or 5 mm. in diameter, and present less distortion and are more suitable for microscopic examination than the specimens obtained by a needle biopsy. The procedure is simple and is done easily at the patient's bedside. Danger of lung puncture from the rongeur is almost nil because of its blunt tip, but caution must be exercised in creating the stab incision. One is guided here by the known length of the 15 guage needle and the fact that its tip is within the pleural space. This procedure is not recommended for a patient without pleural effusion or in the extremely emaciated patient whose intercostal spaces are depressed. In the first instance, damage may be done to underlying tissue. In the second one, there may be the possibility of introducing a pneumothorax because of the meager amount of tissue between skin and parietal pleura. The procedure is painless and of short duration, with minimal discomfort to the patient afterward. Pneumothorax has not been produced. To obtain no pleural specimen is almost unknown, whereas with the needle biopsy technique the percentage of yield of an adequate pleural biopsy is reported to be between 50 to 80%.

The only procedure for punch biopsy of the pleura found in the literature is that described by Abrams.[1] His instrument consists of concentric tubes and a stylet. It requires two free hands to maneuver, but can also be used to aspirate the fluid at the same time.

The Kerrison rongeur is easier to use, and the instrument is more readily available, for it can be used also by the orthopedic and neuro-surgeons in their field. Kerrison rongeurs have been used here because they are readily available. Other similar rongeurs may be used with equal ease.

Summary

A procedure for pleural biopsy has been presented. The technique is easily done, the specimens more adequate for examination and the distress to the patient is minimal.

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Editorials

INTERNAL MEDICINE —

The delightful discussion of the past and future of Internal Medicine that appears as the lead article in this issue was not written for publication. Six months ago the director of a medical department sent it as a memorandum to all members of that department. Much confusion exists regarding the definition of an internist and internal medicine. It would be impossible for any article or memorandum to give the answers to these questions; in fact, Dr. Flinn actually adds another definition of an internist. He has, however, given excellent advice to young internists, which, if followed, will not only insure the future of Internal Medicine but will strengthen the position of the medical profession in the community.

CARDIAC SURGERY —

The June 25th issue of the J.A.M.A. contains a much needed and long awaited guest editorial entitled *Factors to be Considered in Surgery for Closure of Ventricular Septal Defects.* While long overdue, this message was worth waiting for when presented by someone of Dr. Helen Taussig's stature. Dr. Taussig states that despite the ever increasing number of congenital cardiac defects that are becoming amenable to surgery, surgery is not indicated in every instance. We must realize that some patients with congenital heart disease are capable of living a normal life; we must never underestimate the danger of open heart surgery. Certainly, in many instances, our technic is improving so rapidly that by waiting several years we may well get a better and safer operation. Dr. Taussig's editorial should be read by every practicing physician.

HYPNOSIS —

Should an operator with no knowledge of pathology be allowed to perform surgery? Should a physician with no knowledge of pathology prescribe drugs for the treatment of a pathological condition? Then why should a person with no knowledge of psychopathology be permitted to perform hypnosis? Meldman presents a case history in the May 28th J.A.M.A. in which hypnosis was used on a young man and resulted in suppression of his symptoms and their replacement by a much more serious set of problems. Hypnosis is a valuable but dangerous tool and its use should be restricted to physicians with a special knowledge of psychopathology.

CARDIAC PACEMAKER —

Elsewhere in this issue is a report of the first patient in Delaware to have the benefit of an internal cardiac pacemaker. Over the years many drugs have been recommended in the treatment of Stokes-Adams attacks. Recently isoproterenol hydrochloride and steroid therapy have been given some credit for success in treatment. For the past few years, occasional patients have been tided over a crisis by the use of the external cardiac pacemaker. As is true in so many conditions, the simplest remedy is sometimes the best and a forceful blow on the sternum of a patient in such an attack frequently is followed by the resumption of cardiac activity. Nevertheless in this age of instrumentations it is only fitting that progress be made along the lines of the establishment of cardiac rhythm and the use of a small transistorized pacemaker attached to the heart by internal electrodes is certainly progress. We congratulate the authors. Best wishes for continuing this work.

In Brief

Report On Oral Vaccine

Following the release of reports on the use of the Sabin, or live virus, polio vaccine in the USSR during the past year, Surgeon General Leroy E. Burney stated that the U.S.P.H.S. will undertake an immediate and exhaustive analysis of the safety and effectiveness of this oral vaccine before licensing it for public use. In the meantime, Dr. Burney urged the continued use of the highly effective Salk vaccine in fighting polio.

Medical Testimony Upheld

In an industrial accident case, tried in May of this year, the Delaware Supreme Court ruled that "Medical testimony may properly be the basis of the Board's decision notwithstanding the fact that the testimony of claimant and his witness was contradictory." In this case the decision of the Accident Board, in favor of the employer, was upheld by the Supreme Court.

VD Wave

The year 1960 threatens to develop the highest national syphilis incidence in 10 years, according to Chicago Public Health Service official, Clifford H. Cole, M.D. In addressing the Illinois Social Hygiene League, he warned the nation of a coming wave of syphlis attributed to the juvenile group who are attempting to assume the role of adults in respect to possessions and sex activitiy.

Research Retirement

David Marine, M.D., was the recipient of the Kober Medal of the Association of American Physicians at their Annual Meeting in Atlantic City, May 4th. The 1960 gold medal, given for outstanding achievement in medicine, was awarded to Dr. Marine for his research on the physiology and pathology of the thyroid gland. Retired and living in Rehoboth Beach, Delaware, Dr. Marine has expanded his love of research to delving into Sussex County history and archeology.

Staff Of Life Expanded

L-lysine added to a bread diet may enable the body to retain larger amounts of protein, according to experiments made in the DuPont Company's electrochemicals department. Dr. Harold Rice, a nutritionist with the company, reviewed a study made with Purdue University students, at a meeting of the American Institute of Nutrition.

Radiation Fear

The beneficial side of radiation was stressed by Robert W. Frelick, M.D., chief of the isotope laboratory, Memorial Hospital, and Dr. Arnold W. Clark, professor of biological sciences at the University of Delaware, in addressing a meeting of *Atoms and Us* at the Highlands Elementary School. Both men urged that individuals requiring x-rays leave the decision to the attending physician and not worry about ill effects which might result from radiation. Public instruction on radiation properly used will do much to dispel the fear induced by atomic "fall-out" publicity.

Golf Honors

The Second Golf Handicap Tournament for the championship of the New Castle County Medical Society was held in conjunction with the Annual Social Meeting at the Hercules Country Club on June 23, 1960. The top honors went to Doctors Haynes B. Cates, Frederick A. Bowdle, and John C. Pierson. Prizes were also won by Doctors Robert M. Marine, Major Wilson Gasper, and Paul A. Shaw.

Cancer Research Funds

An announcement was made by the Delaware Division of the American Cancer Society that funds are available for research in the State of Delaware. Information about applications may be had at their headquarters in the Academy of Medicine Building, 1925 Lovering Avenue, Wilmington 6, Delaware.

The Price Of Inflation

A $26,030 income of today is no better than the $10,000 income of 1939, says the National Industrial Conference Board. A married man with two children (the basis for all figures) making $5,000 in 1939 would have $4,941 to spend—$59 being allotted to income and social security taxes. Twenty-one years later the same man now has to make $12,307 a year in order to have the spending power of $4,941 in 1939 dollars. Income and social security taxes for $12,307 would be $1,877—and the biggest bite, inflation, would cost $5,489. No allowances were made in this survey for state, local or other federal taxes. The loss of purchasing power of the American dollar was based on changes in the consumer price index of the Bureau of Labor Statistics.

Personal Glimpses

Willard F. Preston, M.D., Wilmington, received an honorary degree at the commencement exercises of his undergraduate school, Mt. St. Mary's College, Emmitsburg, Maryland . . . George J. Boines, M.D. and James P. Walsh, M.D., presided at a seminar for physicians on the care of the aged held at St. Francis Hospital . . . Clarence J. Prickett, M.D., was reappointed for a three year term to the board of trustees of the Delaware State Hospital . . . George P. Rosemond, M.D., has been promoted to professor and co-chairman of the department of surgery at Temple University School of Medicine . . . Dr. M. A. Tarumianz headed the speakers at the annual Parents Day ceremony held at Stockley's Hospital for the Mentally Retarded; a bronze bust of Dr. Tarumianz was unveiled and placed in the lobby of the medical center . . . Gerald A. Beatty, M.D. was re-elected president of the Delaware Tuberculosis and Health Society (formerly the Anti-Tuberculosis Society) for the 9th year; Samuel G. Elbert, Jr., M.D. and Alfred R. Shands, Jr., M.D., were elected to the Executive Committee . . . Otakar J. Pollak, M.D., elected president of the Beebe Hospital staff; Ulo Ware, M.D., vice-president and A. L. Czebotari, secretary . . . Lemuel C. McGee, M.D., read a paper *Medical Care in Industry* at the 2nd Seminar on Occupational Health held at Colombia Medical School, Colombia, S.A.; Mrs. McGee, President of the Woman's Auxiliary to the Medical Society of Delaware, and their two daughters accompanied Dr. McGee on the trip to Medellin . . . Arnold H. Williams, M.D., was installed as president of the Laurel Rotary Club . . .

● Delaware's delegate to the AMA reports on the proceedings of the 109th Annual Meeting, with emphasis on health care for the aged, pharmaceutical problems, relations with other health groups, and occupational health programs.

REPORT ON THE 1960 ANNUAL MEETING
of the American Medical Association

H. Thomas McGuire, M.D.

Nearly a hundred reports and resolutions occupied the delegates to the 109th Annual Meeting of the American Medical Association, held in Miami Beach, June 13-17. They included matters of policy which will affect medicine on the national and local levels for many years to come. The major issues involved health care for the aged, pharmaceutical problems, relations with other health groups, and occupational health programs.

Aged Care

As might have been expected, in view of the furor surrounding health care for the aged, this subject occupied a considerable part of the Delegates' time. Of great importance to a proper understanding of the AMA's position on this problem was a supplementary report of the Board of Trustees recapitulating the status of plans for the health care of the aged, and reviewing the AMA's efforts in this field. This report made clear the existence of the Committee on Geriatrics (later the Committee on Aging) as a part of the Council of Medical Service well before the adoption of the aged group as political capital by those seeking extenson of a national compulsory health insurance program.

Progressing to the charge that the medical profession has opposed dangerous legislation, but has failed to present a positive program of its own, the Board of Trustees reviewed the AMA program with the emphatic notation that allegations of negativism on the part of the profession have been untrue.

Positive Program

Briefly, the positive program embraces support of governmental participation in the purchase of health care for *indigent* persons; support of the FHA amendment providing for mortgage assistance for expansion of proprietary nursing homes; participation with other organizations in the development of home care programs and homemaker services; provision of leadership in promoting the expansion of health insurance plans and the development of new and more effective methods of prepayment; active support of efforts to eliminate the mandatory retirement at 65 and discriminatory employment practices against those over 45.

The Board of Trustees restated the Association's policy as one of supporting every assistance, including governmental assistance, for the sick who are in direct need of this kind of help. The Association has not and does not endorse governmental assistance for those sick who are able to prepay or otherwise pay their own health costs.

Summarizing this policy, the House of Delegates adopted the following statement as the official stand of the Association:

> "Personal medical care is primarily the responsibility of the individual. When he is unable to provide this care for himself, the responsibility should pass to his family, the community, the county, the state, and only when all these fail, to the federal government, and then only in conjunction with other levels of government in the above order. The determination of medical needs should be made by a physician and the determination of eligibility should be made at the local level with local administration and control. The principle of freedom of choice should be preserved. The use of tax funds under the above conditions to pay for such care, whether through the purchase of health insurance or by direct payment, provided local option is assured, is inherent in this concept and is not inconsistent with previous actions of the House of Delegates of the American Medical Association."

In other actions on aging, the House authorized a national assembly to develop the specifics of health service and facilities for the aged, with a report by the AMA to the people.

Pharmaceutical Issues

In the pharmaceutical area the House made one statement of policy and took action to consider the charges made against the drug industry before a committee of the U.S. Senate.

As policy, the House agreed with the pharmacy profession that the filling of prescriptions by mail order is not in the best interest of the patient, except when the geographical isolation of the patient makes it necessary. The House pointed out that in the mail order process the direct relation between patient, physician and pharmacist is lost, and that this does not contribute to the public health or welfare.

Acting upon a resolution introduced from Delaware, the House directed the Board of Trustees to submit an appraisal of the current situation in the pharmaceutical industry to the House in June of 1961. The wording of the resolution, as introduced by me and amended by the Reference Committee, spells out the reasoning behind this request for an appraisal:

> "WHEREAS, Current legislative investigations of the pharmaceutical industry have created doubts and questions in the public mind concerning the development, testing, approval, pricing, and marketing of drugs; and
>
> WHEREAS, Certain proposals have been made which, if carried out, might impair the future of pharmaceutical research and development, thus retarding the progress of scientific therapy; and
>
> WHEREAS, The services of the pharmaceutical industry are so vital to the public and to the medical profession that an objective study should be made; therefore be it
>
> RESOLVED, That the Board of Trustees be directed to request the Council on Drugs and other appropriate Councils and Committees of the Association to study the pharmaceutical field and its relationship to medicine and the public, to correlate available material, and after consultation with the several branches of clinical medicine, clinical research, and medical education and other interested groups or agencies, submit an objective appraisal to the House of Delegates in June, 1961."

Allied Health Groups

The House received and approved the final report from the Committee to Study the Relationships of Medicine with Allied Health Professions and Services. The report covered the present situation of these relationships, and their future implications, and suggested principles for activating physician leadership in this area. The House recommended continuing AMA activity and approved the appointment of a commititee of the Board of Trustees to carry on this work.

Specific approval for promoting cooperative efforts with the allied health professions and services went to the following AMA activites:

1. A conference with scientists in related fields to promote permanent cooperative activity.
2. Conferences between national specialty societies and non-physician scientists specifically allied to the area of medical practice concerned.
3. Conferences with professional and technical assistants concerning education, recruitment, and coordination of activities.
4. Reciprocal exchange of information between physicians and other scientists through joint meetings and publications.
5. Liaison between representatives of the AMA and other professional and technical groups.

Occupational Health Programs

The House expanded somewhat the statement on "Scope, Objectives and Functions of Occupational Health Programs" originally adopted in June, 1957. The new statement places greater emphasis on the preventative and health maintenance concepts of occupational health programming, and makes more positive organized medicine's obligation to improve occupational health services by part-time physicians in small industries. As corrolaries, this statement includes guidance on the proper use of immunization procedures for employees and stresses the need for teamwork with lay industrial hygienists in suiting the occupational health program to the specific employee group that it serves.

The new statement also places increased emphasis on rehabilitation of the occupationally ill and injured, which complements a projected study by the Council on Occupational Health of the employment of the physically handicapped.

Highlights

In actions affecting hospital staffs, the House approved contingent appointments of not more than 6 months for foreign medical school graduates who have been accepted for the September, 1960 screening examination, and asked the Board of Trustees to initiate a study of content and methods of preparation of hospital records.

In actions affecting members as individuals, the House directed the Board to develop group annuity and group disability insurance programs for Association members, and reaffirmed its opposition to compulsory inclusion of physicians under the Social Security Act; urged reform of the federal tax structure to return to the states and their subdivisions sources of revenue; decided against establishing a home for aged and retired physicians; and urged individual members of the AMA to take greater interest and more active part in public affairs on all levels.

Dr. Louis M. Orr, retiring AMA president, urged medical societies to "adopt" rural villages, cities, etc., in undeveloped parts of the world and to send them medical and hospital supplies. Dr. Orr specifically commended the Junior Chamber of Commerce of Wilmington for its efforts in supplying medicines to a leper colony in Thailand.

Dr. E. Vincent Askey, incoming president, declared in his inaugural address that the decade to come will present medicine with its greatest challenge, that of proving the effectiveness of practice in a free society. In a later address, Dr. Askey urged intensive, accelerated effort in medical education, health insurance, third-party relationships, mental health, and AMA membership relations.

Dr. Leonard W. Larson of Bismark, North Dakota, former Chairman of the Board of Trustees, was unanimously elected president-elect. Dr. Larson will become president at the June, 1961, meeting in New York City. Dr. H. Thomas McGuire of Delaware was nominated for election to the Council on Medical Service but withdrew in favor of Dr. Russell B. Roth, an incumbent re-elected to the Council.

Auxiliary Affairs

Left to hight: Mrs. James B. Homan of Milford, publicity chairman; Mrs. Leslie M. Dobson, president; Mrs. Aubrey C. Smoot, Jr., treasurer, and Mrs. James Beebe, Jr., vice president.

When the Woman's Auxiliary to the Medical Society of Delaware convenes on September 8, 9 and 10 in Rehoboth Beach, it will enjoy the hospitality of a most active and enthusiastic county auxiliary and one of the loveliest vacation spots in the country. Sussex County, proud possessor of Delaware's only ocean beach, and an able group of thirty-two doctors' wives, who comprise the Woman's Auxiliary to the Sussex County Medical Society, cooperate to make the state meeting a much anticipated and most enjoyable event.

Since our President-elect, Mrs. J. Leland Fox of Seaford, will be installed at the Convention as president of the State Auxiliary for the 1960-61 year, there is an added note of pride in this year's proceedings. This is the second time that Mrs. Fox has been gracious enough to serve as president of the State Auxiliary and she has an enviable record of participation in all phases of Auxiliary affairs.

At the County level, the Auxiliary operates as an active service and social organization under the efficient leadership of Mrs. Leslie M. Dobson of Milford, president. They meet at the homes of their members, with meetings planned to coincide with their husbands' monthly meetings on the second Thursday of the month. Serving with Mrs. Dobson are Mrs. James Beebe, Jr., of Lewes, vice president; Mrs. Carleton C. Fooks of Milford, secretary; and Mrs. Aubrey C. Smoot, Jr., of Georgetown, treasurer.

Their principal service project has been aid for the Hospital for the Mentally Retarded at Stockley. They have sent personalized gifts and contributions to the patients on all appropriate holidays and occasions and have a deep interest in supplying what small pleasures they can to the patients.

In addition to support of local charities and schools, the Auxiliary is untiring in its effort to contribute to the American Medical Education Foundation. In 1958-59, they were able to contribute twice as much as they had pledged through the sale of Christmas cards. They hope to maintain this same high standard in 1959-60 through the sale of Delaware seals and donations.

In addition to Mrs. Fox, the Sussex County Auxiliary is proud to note three more active participants on the Executive Board of the State Auxiliary. Mrs. Robert F. Lewis of Seaford who has worked untiringly on the county scholarship committee, is also state treasurer. Mrs. Laurance L. Fitchett of Milford is state chairman of Mental Health, and Mrs. Carleton C. Fooks is state chairman of Civil Defense.

Books

Recent Accessions to the Library of the Delaware Academy of Medicine

Allergy
- *Netherlands Society of Allergy*: Occupational Allergy, 1958. Thomas

Cardiovascular System
- *Arbeit, Sidney R.; Rubin, Ira L.; Gross, Harry*: Differential Diagnosis of the Electrocardiogram, 1960. Davis
- *Burch, George E. and Winsor, Travis*: A Primer of Electrocardiography, 4th ed., 1960. Lea and Febiger
- *Mozes, Eugene B.*: Living Beyond your Heart Attack, 1959. Prentice-Hall Inc.
- *Selye, Hans*: The Chemical Prevention of Cardiac Necroses, 1958. Ronald Press Company

Dentistry
- *Goldman, Henry M.; Schluger, Saul; Fox, Lewis; and Cohen, D. Walter*: Periodontal Therapy, 2nd ed., 1960. Mosby
- *McCracken, William L.*: Partial Denture Construction. Principles and Techniques, 1960. Mosby
- *Thoma, Kurt H.; Goldman, Henry M.*: Oral Pathology, 5th ed., 1960. Mosby
- *Thoma, Kurt H.; and Robinson, Hamilton, B. G.*: Oral and Dental Diagnosis, 5th ed., 1960. Saunders.

Dermatology
- *Welsh, Ashton L.*: Differential Diagnosis ot Leukoplakia, Leukokeratosis, and Cancer in the Mouth, 1955. Thomas

Endocrinology
- *Mitskevich, M. S.*: Glands of Internal Secretion in the Embryonic Development of Birds and Mammals, 1957. Academy of Sciences of U.S.S.R.

Hemic and Lymphatic System
- *Hayhoe, F. G. J.*: Leukemia Research and Clinical Practice, 1960. Little, Brown and Company

History of Medicine
- *Keevil, J. J.*: Medicine and the Navy, Volumes I-II, 1957. Livingstone

Infectious Diseases
- *Simon, Harold J.*: Attenuated Infection, 1960. Lippincott

Medicine
- *Moyer, John H. and Fuchs, Morton*: Edema, Mechanisms and Management, 1960. Saunders

Musculoskelatal System
- *Evans, F. Gaynor*: Stress and Strain in Bones, 1957. Thomas
- *Hollander, Joseph Lee*: Arthritis and Allied Conditions, 6th ed., 1960. Lea and Febiger

Nervous System
- *Ajmone-Marson, Cosimo and Ralston, Bruce L.*: The Epileptic Seizure, 1957. Thomas
- *Brock, Samuel*: Injuries of the Brain and Spinal Cord, 4th ed., 1960. Springer
- *Cooper, Irving S.*: The Neurosurgical Alleviation of Parkinsonism, 1956. Thomas
- *Institute of Higher Nervous Activity*: Pathophysiological Series, 1956, Vol. II. Academy of Sciences of the U.S.S.R.

Obstetrics and Gynecology
- *Guttmacher, Alan F. and Rovinsky, Joseph J. ed.*: Medical, Surgical and Gynecological Complications of Pregnancy, 1960. Williams and Wilkins Company

Pediatrics
- *Livingston, Samuel*: The Diagnosis and Treatment of Convulsive Disorders in Children, 1954. Thomas

Public Health
- *Calderone, Mary Steichen*: Abortion in the United States, 1958. Hoeber-Harper

Respiratory System
- *Bloomer, William E.; Liebow, Averill; Hales, Milton R.*: Surgical Anatomy of the Bronchovascular Segments, 1960. Thomas
- *Drinker, Cecil K.*: The Clinical Physiology of the Lungs, 1954. Thomas
- *von Hayek, Heinrich*: The Human Lung, 1960. Stechert and Hafner

Surgery (*See also Respiratory System*)
- *Burks, James W., Jr.*: Wire Brush Surgery, 1956. Thomas
- *Moore, Daniel C.*: Complications of Regional Anesthesia, 1955. Thomas
- *Mulholland, John H.; Ellison, Edwin H.; Friesen, Stanley R.*: Current Surgical Management II, 1960. Saunders

Urogenital System
- *Butt, Arthur J.*: Etiologic Factors in Renal Lithiases, 1956. Thomas

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ANNUAL MEETING, Medical Society of Delaware

Rehoboth, Delaware September 8, 9, 10, 1960

1776 -- MEDICAL SOCIETY OF DELAWARE -- 1960

INCORPORATED 1789

OFFICERS

President, James E. Marvil, Laurel
President-Elect, Lemuel C. McGee, Wilmington
Vice-President, Charles M. Moyer, Laurel
Secretary, Norman L. Cannon, Wilmington
Treasurer, Charles Levy, Wilmington
Executive Secretary, Mr. Lawrence C. Morris, Jr., Wilmington
American Medical Association (1960) — Delegate, H. Thomas McGuire, New Castle — Alternate, Leslie M. Dobson, Milford
Representative to Delaware Academy of Medicine, Victor D. Washburn, Wilmington

STANDING COMMITTEES

Budget

Charles Levy, Wilmington
R. L. Klingel, Rehoboth
T. H. Pennock, Wilmington
W. C. Pritchard, Smyrna
M. A. Tarumianz, Farnhurst

Medical Education

G. B. Heckler, Wilmington
L. L. Fitchett, Milford
Albert Gelb, Wilmington

Nominations

J. W. Alden, Wilmington
J. B. Homan, Dover
F. A. Jones, Wilmington
G. M. Van Valkenburgh, Georgetown

Program

J. T. Metzger, Wilmington
James Beebe, Jr., Lewes
J. C. Rawlins, Seaford

Publications

A. H. Clagett, Jr., Wilmington
N. L. Cannon, Wilmington
M. A. Tarumianz, Farnhurst

Public Laws

W. O. LaMotte, Jr., Wilmington
G. A. Beatty, Wilmington
James Beebe, Jr., Lewes
J. L. Fox, Seaford
J. S. McDaniel, Sr., Dover

SPECIAL COMMITTEES

Advisory, Woman's Auxiliary

L. C. McGee, Wilmington
C. C. Gray, Bridgeville
A. D. King, Wilmington
R. F. Lewis, Staford

Aging

C. J. Prickett, Smyrna
J. A. Elliott, Laurel
A. J. Heather, Wilmington
H. J. Laggner, Smyrna
Felix Mick, Milford
R. B. Thomas, Wilmington
Arthur Tormet, Lewes

Alcoholism

M. A. Tarumianz, Farnhurst
Bruce Barnes, Seaford
J. A. Flaherty, Wilmington
H. T. McGuire, New Castle

SPECIAL COMMITTEES

American Medical Education Fdn.

J. L. Fox, Seaford
F. R. Everett, Dover
V. A. Hudson, Millsboro
R. L. Klingel, Rehoboth
W. W. Lattomus, Wilmington
C. G. Pierce, Rehoboth
G. O. Poole, Wilmington
S. W. Rennie, Wilmington

Grievance

E. R. Mayerberg, Wilmington (*Deceased*)
R. W. Murray, Wilmington
L. L. Fitchett, Milford
A. R. Shands, Jr., Wilmington
H. V'P. Wilson, Dover

Maternity and Infant Mortality

F. S. Hassler, Wilmington
B. F. Burton, Dover
W. P. Ellis, Laurel
K. L. Esterly, Wilmington
L. L. Fitchett, Milford
A. M. Gehret, Wilmington
C. C. Gray, Bridgeville
O. N. Stern, Wilmington
R. O. Y. Warren, Wilmington

Medical Economics

E. L. Stambaugh, Lewes
W. B. Cooper, Seaford
W. H. Lee, Middletown
R. D. Sanders, Wilmington
Ulo Ware, Lewes

Medical School for Delaware

J. E. Marvil, Laurel
L. C. McGee, Wilmington
C. M. Moyer, Laurel
A. R. Shands, Jr., Wilmington
H. V'P. Wilson, Dover
Mr. Harry Lynch, Wilmington
(*Consultant*)

Medical Service and Public Relations

A. J. Morris, Wilmington
J. B. Baker, Milford
D. D. Burch, Wilmington
R. R. Layton, Dover
A. E. Maresch, Dagsboro
E. R. Mayerberg, Wilmington (*Deceased*)
J. T. Metzger, Wilmington

SPECIAL COMMITTEES

Medicare Adjudication

W. F. Preston, Wilmington
J. R. Fox, Dover
O. A. James, Milford
E. N. Johnson, Wilmington
S. W. Rennie, Wilmington
G. M. Van Valkenburgh, Georgetown
H. M. Wilberg, Lewes

Medico-Legal Affairs

J. T. Metzger, Wilmington
W. L. Bailey, Wilmington
James Beebe, Jr., Lewes
W. R. Campbell, New Castle
J. L. Fox, Seaford
P. D. Gordy, Wilmington
J. W. Howard, Wilmington
R. F. Lewis, Seaford
J. S. McDaniel, Sr., Dover
O. J. Pollak, Dover
G. M. Van Valkenburgh, Georgetown

Military and Veterans Affairs

O. A. James, Milford
R. L. Dickey, Laurel
G. A. Lessey, Wilmington
J. W. Lynch, Seaford

National Defense

J. R. Beck, Wilmington
L. M. Dobson, Milford
D. N. Gay, Wilmington
J. B. Homan, Dover
D. N. Sills, Jr., Milford
A. C. Smoot, Jr., Georgetown

Polio Immunization

H. H. Stroud, Wilmington
R. H. Beckert, Bridgeville
G. J. Boines, Wilmington
M. I. Handy, Wilmington
F. I. Hudson, Wilmington
C. M. Moyer, Laurel
J. C. Rawlins, Seaford
R. O. Y. Warren, Wilmington

School Health

R. W. Frelick, Wilmington
Sarah Bishop, Wilmington
A. L. Heck, Georgetown
J. C. Rawlins, Seaford

Liaison with Delaware Chapter, American Cancer Society—O. N. Stern
Liaison with Delaware Chapter, American Heart Association—E. M. Krieger
Liaison with Delaware Tuberculosis and Health Society—G. A. Beatty
Liaison with Mental Health Activities—M. A. Tarumianz
Liaison with Vocational Rehabilitation Commission—S. W. Casscells

WOMAN'S AUXILIARY — 1959-1960

Mrs. L. C. McGee, *President,* Wilmington
Mrs. J. L. Fox, *President-Elect,* Seaford
Mrs. John J. Lazzeri, *Vice President,* Smyrna
Mrs. R. F. Lewis, *Treasurer,* Seaford
Mrs. J. T. Metzger, *Recording Secretary,* Wilmington
Mrs. I. L. Chipman, Jr., *Corresponding Secretary,* Wilmington

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NEW CASTLE COUNTY MEDICAL SOCIETY

Meets Third Tuesday

A. D. King, *President*
A. M. Gehret, *President-Elect*
F. A. Jones, *Vice-President*
H. J. Repman, *Secretary*
J. W. Alden, Jr., *Treasurer*
E. C. Syrovatka, LL.D., *Executive Sec'y.*

Councilors: I. M. Flinn, Jr. (1960), J. W. Howard (1961), G. W. Martin, Jr. (1962).

Board of Directors: A. D. King, F. A. Jones, A. M. Gehret, H. J. Repman, J. W. Alden, Jr., I. M. Flinn, Jr., J. C. Pierson (1960), G. A. Beatty (1961), H. T. McGuire (1962).

Delegates (1960): H. M. Baganz, M. E. Conrad, J. B. Dukes, D. G. Durham, K. L. Esterly, F. J. Gilday, J. F. Hughes, R. W. Hillyard, C. M. Karpinski, A. D. King, Morton Keyser, W H. Kratka, J. T. Metzger, W. W. Moore, H. J. Repman, K. S. Russell, C. H. Smith.

Alternates (1960): A. E. Bacon, Jr., M. H. Dorph, E. F. Gliwa, C. B. Hearne, G. B. Heckler, W. J. Holloway, P. W. Huntington, M. J. McKusick, F. T. O'Brien, W. L. Porter, D. J. Reinhardt, S. W. Rose, J. C. Sallee, W. D. Shellenberger, Isadore Slovin, C. W. Wagner, Charles Walker, Jr.

Delegates (1961): E. M. Bohan, F. A. Bowdle, T. J. Bulger, Italo Charamella, A. H. Clagett, Jr. J. J. Davolos, J. A. Flaherty, R. W. Frelick, A. M. Gehret, W. R. Hazzard, L. R. Kimble, D. W. MacKelcan, C. E. Maroney, M. B. Pennington, P. A. Shaw, H. H. Stroud, H. A. Tarrant.

Alternates (1961): R. S. Brennan, I. L. Chipman, Jr., F. J. DiCecco, J. J. Egan, J. F. Flanders, W. T. Gallaher, Jack Gelb, P. D. Gordy, L. I. Maske, Livio Olmedo, P. P. Potocki, David Rich, G. J. Savage, C. A. Skowron, Charles Strahan, Jr., H. F. Wendel, L. W. Whitney.

Woman's Auxiliary

Mrs. J. J. Davolos, *President*
Mrs. E. T. O'Donnell, *President-Elect*
Mrs. D. J. Reinhardt, III, *Vice President*
Mrs. P. W. Huntington, *Secretary*
Mrs. J. M. Barsky, Sr., *Treasurer*

KENT COUNTY MEDICAL SOCIETY

Meets Third Tuesday

R. J. Bishoff, *President*
J. A. Krieger, *Vice-President*
J. A. J. Forest, Jr., *Secretary-Treasurer*

Councilors: H. G. Neese (1961), J. J. Lazzeri (1962).

Delegates: J. R. McNinch (1961), F. R. Everett (1961), R. W. Comegys (1962).

Alternates: E. H. Mercer (1962).

Censors: H. J. Laggner, J. B. McClements, G. R. Spong.

Woman's Auxiliary

Mrs. H. J. Laggner, *President*
Mrs. J. F. Hays, *President-Elect*
Mrs. E. S. Dennis, *Secretary*
Mrs. R. R. Layton, *Treasurer*

SUSSEX COUNTY MEDICAL SOCIETY

R. L. Dickey, *President*
C. G. Pierce, Jr., *Vice President*
Felix Mick, *Secretary-Treasurer*

Councilors: L. M. Dobson (1962), A. H. Williams (1961).

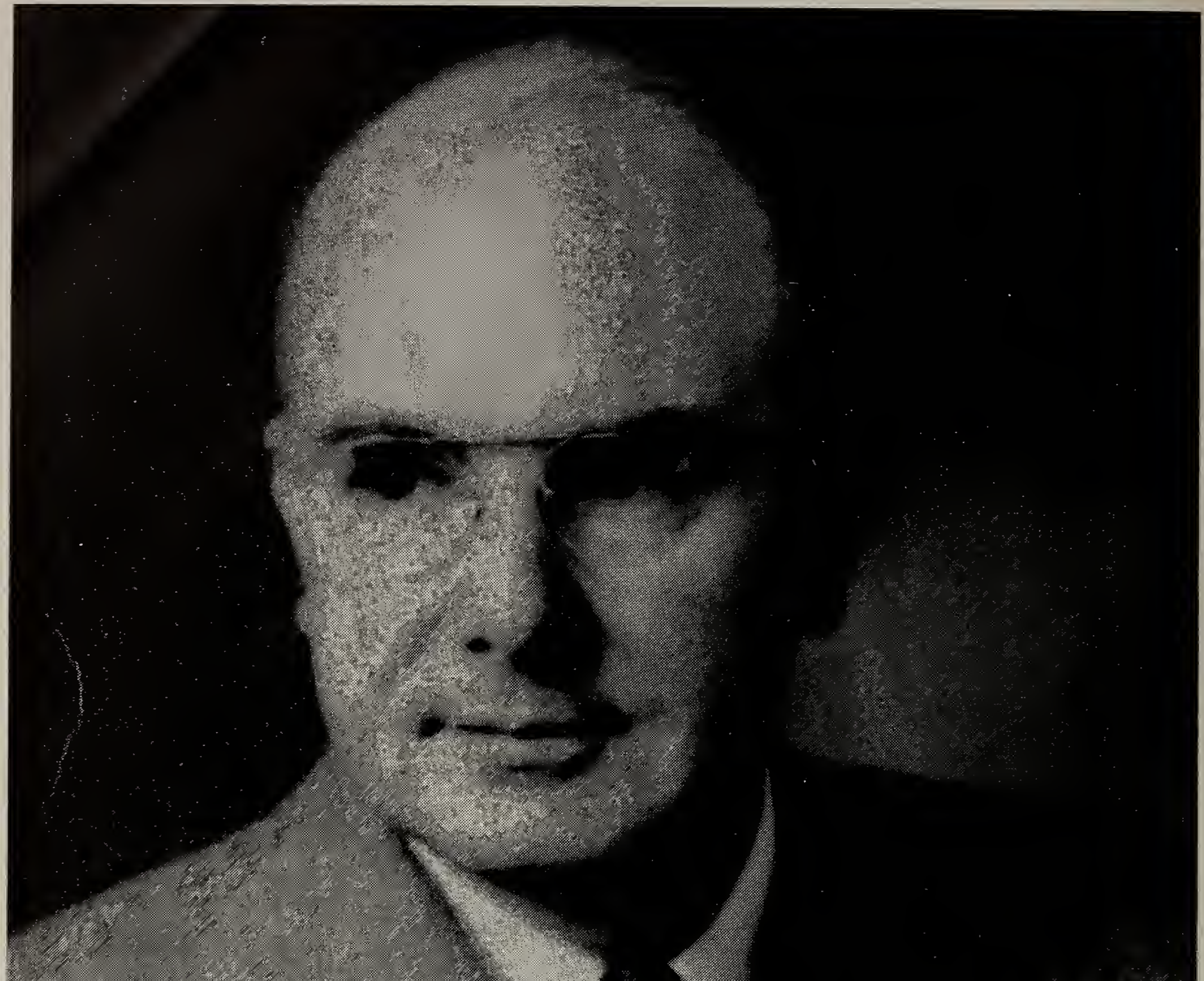
Censors: J. B. Homan, R. L. Klingel, W. B. Cooper.

Delegates: O. A. James (1960), J. W. Lynch (1960), J. C. Rawlins (1960), J. A. Elliott (1961), E. L. Stambaugh (1961), G. M. VanValkenburgh (1961).

Alternates: J. L. Fox (1960), R. C. Kingsbury (1960), D. N. Sills, Jr. (1960), W. B. Cooper (1961), C. G. Pierce, Jr. (1961), A. C. Smoot, Jr. (1961).

Woman's Auxiliary

Mrs. L. M. Dobson, *President*
Mrs. A. C. Smoot, *President-Elect and Treasurer*
Mrs. C. C. Fooks, *Secretary*



JAMES E. MARVIL, M.D.

President, Delaware Medical Society, 1960

MEDICAL SOCIETY OF DELAWARE 1776-1789-1960

171st ANNUAL MEETING

September 8-9-10, 1960 - Lewes and Rehoboth

PROGRAM

September 8

Henlopen Hotel, Rehoboth

7:00 P.M.	House of Delegates

SCIENTIFIC SESSION

September 9

Methodist Fellowship Hall, 4th and Market Streets, Lewes, Delaware

9:00 - 9:30	Registration — Exhibits — Coffee
9:30 - 9:35	Welcome to Lewes — Hon. Otis Smith, Mayor of Lewes — Robert L. Dickey, President, Sussex County Medical Society
9:35 - 9:45	Report of the House of Delegates — Secretary, Norman L. Cannon
9:45 - 10:00	Presidential Address — President, James E. Marvil
10:00 - 10:30	*The Physician as a Citizen of Delaware* — The Honorable J. Caleb Boggs, Governor of Delaware
10:30 - 11:10	*Current Therapy of Common Medical Problems* — Walter Levinsky, M.D., Assistant Professor of Medicine, Temple University
11:10 - 11:40	Recess — Exhibits
11:40 - 12:20	*Everyday Lesions of the Head and Neck — Medical and Surgical Treatment* — Octavus P. Large, M.D., Assistant Professor of Surgery, Temple University
12:20 - 1:00	Election of President-Elect for 1960-61 Recess — Exhibits
1:00 - 2:00	Luncheon
2:00 - 2:30	*The Delaware Two-Way Radio Experiment* — Fred MacD. Richardson, M.D., Coordinator of Professional Affairs, The Pennsylvania Hospital
2:30 - 3:10	*Office Diagnosis of Psychiatric Problems* — Kenneth Appel, M.D., Professor of Psychiatry, University of Pennsylvania
3:10 - 3:40	Recess — Exhibits
3:40 - 4:30	To be announced

Henlopen Hotel, Rehoboth

6:30 P.M.	Reception and Cocktails

Henlopen Hotel, Rehoboth

7:00 P.M.	Annual Banquet

September 10

RECREATION

Fishing party — Golf at Rehoboth Country Club — Beach

CONCURRENT MEETINGS

Delaware Academy of General Practice
Delaware Chapter, American College of Physicians (Tentative)
Delaware Chapter, American College of Surgeons
Delaware Diabetes Association
Woman's Auxiliary to the Medical Society of Delaware

EMERGENCY TRANSPORTATION

Weather permitting, Seaboard Air Service, Inc., will stand by to fly any physician to any airstrip in Delaware where his presence is required by a bona fide medical emergency.

PROGRAM OF THE THIRTY-FIRST ANNUAL MEETING

THE WOMAN'S AUXILIARY

TO THE MEDICAL SOCIETY OF DELAWARE

September 9, 1960 — Dinner Bell Inn, Rehoboth, Delaware

10:00 A.M. Registration and Coffee Hour

11:00 A.M. General Session
- Call to order — Mrs. Lemuel C. McGee
- Pledge of Loyalty
- Address of Welcome — Mrs. Leslie M. Dobson
- Response — Mrs. Edward T. O'Donnell
- Introduction of Guests
- Roll Call of Delegates — Mrs. James T. Metzger
- Minutes of 30th Annual Meeting
- Treasurer's Report — Mrs. Robert F. Lewis
- Reports of County Auxiliaries
  - Kent — Mrs. Harold J. Laggner
  - New Castle — Mrs. Joseph J. Davolos
  - Sussex — Mrs. Leslie M. Dobson
- Committee Activities
  - A.M.E.F. — Mrs. Richard W. Comegys
  - Legislation — Mrs. Sylvester W. Rennie
  - Paramedical Careers Recruitment Mrs. James B. Aikins
- National Convention, 1960 — Delegate's Report
- What Happens to an Auxiliary President — Mrs. Lemuel C .McGee
- Report of the Nominating Committee Mrs. Gerald A. Beatty
- Election of Officers
- Installation of Officers — Mrs. Paul E. Rauschenbach, Regional Vice-President, Woman's Auxiliary to the American Medical Association
- Adjournment

1:30 P.M. Luncheon, honoring the Founders of the Woman's Auxiliary to the Medical Society of Delaware
- Invocation—the Reverend William Drysdale Gibson, Rehoboth, Delaware
- Introduction of the Advisory Committee
- Greetings from the Medical Society of Delaware — Dr. James E. Marvil, President
- Address — Mrs. Paul E. Rauschenbach, Regional Vice-President, Woman's Auxiliary to the American Medical Association
- Introduction of Hospitality Chairman, Mrs. Joseph Barsky, Sr., and Committee
- Presentation of Past President's Pin Mrs. Hewitt W. Smith
- Presentation of Gavel and President's Pin
- Inaugural Address — Mrs. J. Leland Fox
- Adjournment

AUGUST, 1960
NUMBER 8
VOLUME 32

Delaware Medical Journal

L-LYSINE IN NUTRITION AND THERAPY*

● This new chloride of a basic amino acid, developed by duPont, has already found a place of value in therapy. Without doubt it will be found useful in many different conditions after it has received a wider clinical use.

C. A. D'Alonzo, M.D.**

I assure you that Dr. Rice and I are pleased and privileged to have been invited to speak to you tonight on some aspects of that essential amino acid, Lysine, and particularly of the preparation of Lysine called "L-Lysine" monohydrochloride.

My role is to briefly tell you something of the background of this material, and to acquaint you with some of the physical and physiological properties of Lysine, which I trust will stimulate some of you—as it has stimulated others—to study the possible therapeutic application of this amino acid in the field of clinical medicine.

Role Well Established

The role of Lysine in both animal and human nutrition is well studied, and its application and value are equally well established. All of the research in the world is of little value therapeutically if the clinical trial fails. There are few agents used today in medicine which compare with Lysine in careful preliminary and fundamental research study.

Used As An Adjunct

Lysine, unlike the antibiotics and tranquilizers, which are in the foreground of study today, has no acute or drastic action. Nothing suddenly happens. Its application is rather that of a reinforcing, or supporting role. It should be an adjunct to other agents.

Lysine has been reported to be of some value as an adjunct in the treatment of certain anemias. In the malabsorption syndrome, for example, anemia is quite

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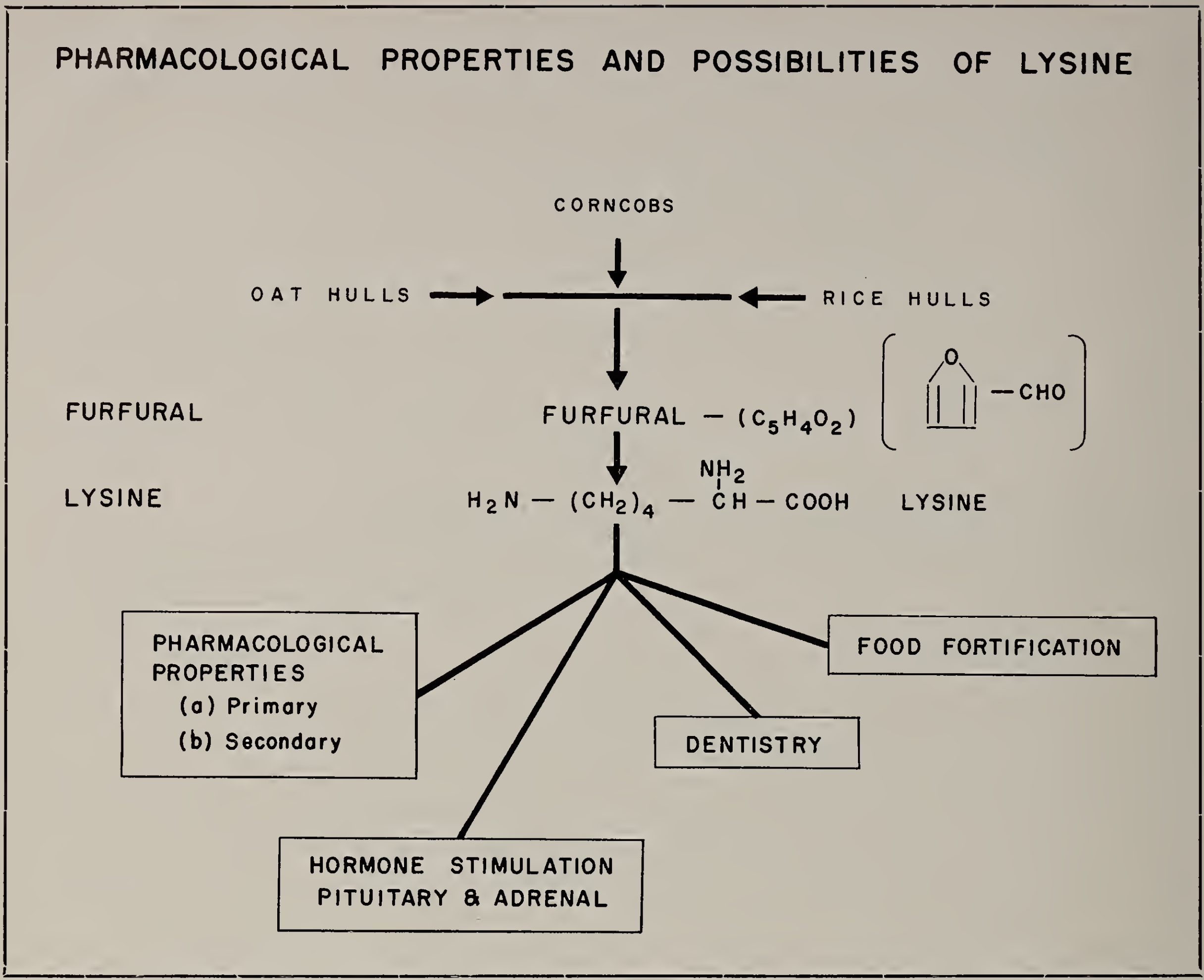
*Resumé of a talk given as the first in a lecture series at the Sindoni Clinic, Philadelphia, February 17, 1960.

**Assistant Director of the Medical Division, E. I. du Pont de Nemours & Company.



The diagram above indicates the raw material and chemistry of Lysine, and of four rather comprehensive fields of application, only one of which has yet been intensively studied.

common due to the deficiency of absorption of iron, folic acid, or vitamin B-12, alone or in combination. The role of the quality or quantity of protein deficiency in the etiology of anemia may be appreciated by the fact that the hemoglobin complex is constituted overwhelmingly of protein, with a comparatively smaller amount of iron, yet the bulk of clinical therapy is directed at the minority iron content. The reason for this, of course, is that the iron deficiency anemias and treatment with iron are well studied and established, whereas the role of protein deficiency in the anemias has commanded less attention and study. To be effective by mouth, iron must be absorbed through the intestinal mucosa. The control of the absorption of iron into the body is apparently mediated by the intestinal mucosal content of the iron containing protein, called ferritin.

Double Blind Study

With this in mind, in our own medical division, we recently did a double blind study on the female employees in our office buildings who had an iron deficiency anemia. Unfortunately, ours was not the best clinical material to study because only one female of the group had a hemoglobin less than 11 grams, and only three had less than 11:5 grams. 12.5 grams/100 ml. of blood, using the cyanamethemoglobin method, was used as a dividing point between the normal and abnormal. We realized that this was, also, open to question because one article in the literature quotes the normal female range of hemoglobin with this method as being 10.2-14.8 gms/100 ml.

In spite of these drawbacks and deficiencies, we proceeded to study this group of 48 females, doing a double blind study

CHART 1

USE (POTENTIAL)	PROPERTY
T SUBSTITUTE	NATURALLY OCCURRING SALTY TASTE
RIATRICS ANT FEEDING OD SUPPLEMENTS ASHIORKOR OTEIN SUPPLEMENT FOR RGERY ; DEBILITATION ; ECTROLYTES ; BURNS (LOCAL INTRAVENOUSLY) RONIC ULCERATIVE COLITIS YROTOXICOSIS STING NEUROLOGICAL DISEASES ABETES VER DISEASES IEUMATOID ARTHRITIS LLAGEN DISEASE	TROPHIC EFFECTS ANABOLIC EFFECTS ANTIANEMIC CONSTITUENT OF CONNECTIVE TISSUE
EMENSTRUAL TENSION EART AND KIDNEY DISEASES DJUNCT TO CORTISONE AND ACTH GRAINE SE WITH OR WITHOUT OTHER DIURETICS	MILD DIURETIC IMPROVES KIDNEY FUNCTION

In the accompanying tables — on the right hand side—are some properties of Lysine which have been reported by others in the literature and summarizd by us. Based on these physical and physiological properties, I have projected on the left side of the tables some potential, therapeutic applications. based on these animal research studies. Of course, I have no idea which of these is likely to prove fruitful.

CHART 2

USE (POTENTIAL)	PROPERTY
ECRETAGOGUE IN ACHLORHYDRIA ERNICIOUS ANEMIA ARCINOMA OF STOMACH DUMPING" SYNDROME	STIMULATES HCL AND PEPSIN
LOW HEALING FRACTURES STEOPOROSIS	INCREASES BONE DENSITY CAUSES CALCIUM RETENTION
DJUNCT TO CHLOROQUINE (ARALEN PHOSPHATE) N THERAPY OF RHEUMATOID ARTHRITIS EA , AIR , CARSICKNESS ÉNIÈRE'S DISEASE	ANTINAUSEOUS , ANTIVERTIGO , ANTIVOMITING
ENTAL USE , ORALLY (LOZENGES), OR BY OUTH , WITH OR WITHOUT FLUORIDE SALT	ANTICARIOGENIC
OTENTIAL USES IN INFECTIONS, TRESS, AND ALLERGY	INCREASES RESISTANCE TO INFECTION AND HISTAMINE
SKIN DISEASES	BENEFIT FROM LYSINE OINTMENT IN TREATMENT OF ECZEMA ; AND IMPROVEMENT IN PIGMENT CHANGES IN KWASHIORKOR

using Lysine, Lysine and iron, iron alone, and a placebo. After a three-month period, we felt that the hemoglobin increase, though small, was definite, and particularly so for the group receiving both iron and Lysine. (See Table 3). This work was not published because of the above-mentioned deficiencies. However, the question naturally arises with us, as I am sure it does with you, what the results would be if the anemias available to us were more definite or severe. I hope that those of you who have available to you a better source of study material will look into the possibility.

Lack Of Protein A Problem

Further, in the so-called degenerative bone diseases, the evidence is becoming increasingly clear that there is only a calcium problem because there is a protein problem; and that not more calcium is needed in the food of the older individual, but a better quality of protein to facilitate the absorption and deposition of calcium in bone. because calcium is usually present in adequate amounts in the normal diet. It is the quality and quantity of protein which is often lacking. Too often, when the serum level of calcium in older individuals is increased by calcium preparations or massive doses of vitamin D, bigger kidney stones, rather than better bone structure, result. Let us not forget that localized bone metabolic disorders may be a facet of an intestinal protein absorption disorder.

L-Lysine Has Much To Offer

Let us consider one more small possible application. Lysine has a mild, salty and meaty flavor. As a salt substitute in the older individual, or in the individual with the problem of heart failure, Lysine as a salt substitute has much to offer. Not only will the serum chloride be raised a small amount, facilitiating the usefulness of the mercurial diuretic, but the serum calcium will be slightly elevated. The hydrochloric acid content of the stomach will slightly increase and, since so many older people have hypochlorhydria, this, as well as other physical properties mentioned, plus the

TABLE 3
MEAN INCREASE IN HEMOGLOBIN CONCENTRATION DURING THE THREE-MONTH STUDY PERIOD

		Mean Hemoglobin Concentration (gm/100 ml)		*Mean Increase In Hemoglobin Concentration (gm/100 ml)*		*Significance Of Mean*
Test Group	*No.*	*Initial*	*Final*	*Unadjusted*	*Adjusted**	*Increase***
Iron and Lysine	9	11.14	12.16	+1.02	+0.63	P=.05
Iron Only	13	11.60	12.35	+0.75	+0.78	P<.05
Lysine Only	13	11.78	11.90	+0.12	+0.31	P>.30
Placebo	13	11.64	11.78	+0.14	+0.20	P>.30
All Groups	48	11.57	12.03	+0.46	+0.46	

*Mean increase after initial hemoglobin is standardized for all test groups.

**Probability of the observed increase occurring under the null hypothesis that the treatment has no effect. The hypothesis may be rejected when P<.05.

improvement in the quality of the proteins consumed, all assembled make the use of Lysine as a salt substitute by far the most satisfactory agent in this respect.

Its Value In Cardiac Cases

Dr. Rubin of Cornell University has beautifully demonstrated the value of L-Lysine monohydrochloride in cardiac cases to produce hyperchloremic acidosis, thus restoring the value of mercurial diuretics in refractory fluid retention states. Dr. Rubin gives 10 gms. of Lysine in tomato juice four times a day until hyperchloremic acidosis develops, then a mercurial diuretic is administered. Usually one to three days are required to produce this state.

You may wonder how Lysine came to be used in the cardiac state in which the body is refractory to the mercurial diuretics. Dr. Rubin informs me that some time ago, in a seminar, this question was discussed. The need was evident for a material which would cause less nausea and vomiting, which had a comparatively pleasant taste, and which was relatively non-toxic when compared with the agents then used. It was, I believe, Dr. du Vigneau, Professor of Biochemistry at Cornell University, and a Nobel prize winner, who suggested Lysine because it possessed the desirable properties mentioned, and yet was relatively and comparatively non-toxic. But it was Dr. Rubin, himself, who, after his initial trial testing and success coined the phrase, "Lysine tastes good like an amino acid should."

There are but a few of the applications, in my opinion, of Lysine in the field of clinical medicine. The physiological properties of Lysine, though mild, are so often desirable that I hope you gentlemen will think of them in the many disorders where need exists, and for which nothing better is yet available.

Thank you for your kind attention. I hope that I have aroused some interest in Lysine, and particularly in some additional applications which may occur to you.

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ANNUAL MEETING, Medical Society of Delaware

Rehoboth, Delaware September 8, 9, 10, 1960

NEW JERSEY'S SITUATION

Concerning Virus Diagnostic Laboratory Facilities*

● **While the virus laboratory may not be of as much help in the individual patient as we would like it to be, it certainly is a part of clinical medicine and its value undoubtedly will increase with time.**

Roscoe P. Kandle, M.D.**

What has happened in the field of virology in the last ten years (especially the last five years) has been short of revolutionary. More than 70 new viruses have been isolated from man during this period. Roughly half were found chiefly in the respiratory tract and the others chiefly in the intestinal tract.

Not so many years ago, the isolation of pathogenic viruses was a feat attempted only by research-type of laboratories within the "ivory towers" of science. With the appyication of tissue culture techniques, such technological changes were adaptable to the public health laboratory. It is praiseworthy that Delaware now has within its borders a virus laboratory to serve the needs of its citizens and the public health in their efforts to control communicable disease. Such laboratories can serve as monitors and forecasters in determining the prevalence and possible spread of viral diseases in our communities.

Without the assistance of the virus diagnostic laboratories, unrecognized outbreaks of viral disease can occur locally at first and then spread to larger and larger areas, reaching epidemic proportions too late to control.

The differential diagnosis of viral disease cannot be relied upon by clinical study alone; common diagnosed viral diseases such as measles sometimes turn out to be really not measles but Echo virus infection.

Paralytic and non-paralytic polio clinically diagnosed, often turns out to be not polio but laboratory-confirmed cases of some form of so-called "aseptic meningitis" caused by either members of Coxsackie, mumps or Echo groups of viruses. The virus laboratory is a sine qua non to the accuracy of viral disease diagnosis.

Bacterially-caused infectious disease control has been eminently successful in the past quarter century, although there is still need for constant surveillance in this area. The keystone for this success has been the bacteriological laboratory. The epidemiological control of virus-caused diseases is similarly dependent on the virus laboratory. Intelligent and understanding use of its facilities will lead to better control of the widening group of viral diseases. As time goes on, new viruses of pathogenic significance are being discovered. Some say that 150 "new" viruses have been discovered in the past few years. Some of these have been found to be the etiological factors in diseases—others sit by awaiting the discovery of some disease with which they can be implicated. They are often referred to as "viruses in search of a disease."

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*Given at the Annual Meeting of the Virus Laboratory of Delaware, Inc., April 23, 1960.

**Health Commissioner of the New Jersey State Health Department.

Keystone To Diseases

The spectrum of diseases in which a virus laboratory is the keystone, is awesome in number, complexity and importance to our lives. They range from the trivial upper respiratory infection to diseases like Eastern Encephalitis with a mortality rate of 64% and extensive brain damage to survivors. They range from exotic and to us rare diseases with euphonic and strange names, like Simliki Forest virus from the Uganda, Russian spring-summer, Rift River Valley, benign lymphocytic choriomeningitis, to measles, chicken pox and fever blisters. The whole influenza group is enough to keep us busy, yet keeping track of and differentiating among the influenzas is just a small, relatively routine job now.

We can appropriately remind ourselves that at the time of the great flu pandemic of 1917 there was no way to make a definitive, casual diagnosis, and that virus has, in fact, never been isolated so far as we know. All our evidence about that outbreak is circumstantial.

It is fascinating to be in on the unscrambling of these complex groups of diseases which is going on now. Among the polio-like diseases, knowledge is advancing rapidly, and is reflected in the reported statistics. In New Jersey the pattern of reported cases of polio used to be, say 400 paralytic cases and 300 non-paralytic in a moderately high year. The number of reported paralytic cases has steadily decreased due to the actual decrease in the disease, due to the vaccine, as you know. The reported cases of non-paralytic have been falling in this kind of order: 380, 111, 50, 80, 30. This is a phenomenon of more accurate diagnosis via the virus laboratory and of fads and trends in medical nomenclature. The other side of the coin, is that a "new" condition is now reported with increasing frequency which is currently called "aseptic meningitis" and last year there were 87 such cases, most of which were, in fact, proven to be of Coxsackie or Echo virus origin. It is extremely important now to identify all polio cases accurately by virus isolation and to determine the type of polio virus causing the disease. Only in this way can we find out what is happening in the epidemiology of this disease and how the vaccine is behaving. Only the virus lab can do this job.

Practical And Limiting Aspects

There are a number of practical and limiting aspects of a virus laboratory which it is good to recognize and perhaps these will help us keep a reasonable perspective. These laboratory procedures cost a lot of money. They require appreciable finite time which cannot be speeded up very much. They are of more use at present to the public health, to epidemiology and accurate knowledge after the fact than they are for the therapy of individuals. They require unusual materials with which to work, carefully protected work areas and exquisite skills.

Let's first look at the crass side-cost. In our experience it costs $25-$150 for each routine polio-like case to be processed. This is just for the relatively easy routine, without anything unusual, or a little extra study, investigation or research, and the cost mounts rapidly. Furthermore, there are limits in man hours and materials which in the virus business may be even harder to come by than money. Obviously, the laboratory cannot and should not accept any specimen anybody wants to send in and there must be firm policies based on the maximum public, not private, benefit.

Eleven-day-old embryonated eggs, suckling mice, live tissue cultures, highly specialized agglutinating sera, etc., etc., are the every-day tools of this trade but they are not so easily stockpiled as ordinary chemicals or bacterial culture media. Furthermore, the techniques basically rely on planting, raising and harvesting live viruses and this biological cycle takes time

—usually days, not infrequently weeks. The agents themselves and their living hosts of mice, egg embryos or living cells in bottles have to be nurtured seven days a week and if they die of intercurrent injury or disease or have other unrecognized diseases, the whole test and diagnostic or research procedure will be ruined. It is often hard to get these simple fundamentals over to the doctors and the public who are entranced, as we all are, by this shining new gimmick and want the same kind of overnight service they get on serological tests for syphilis, or a simple blood chemistry. Virus laboratories are wonderful, but they do not perform miracles and they are workshops where people have to work hard, have to be supplied with materials, have to have 24-hour a day, seven days a week coverage, and where human beings get tired and exasperated occasionally, just as we all do.

Perhaps if we take a brief look at one instance, eastern encephalitis, we can get better perspective. The diagnosis of this disease rests on four sources of evidence.

1. The clinical manifestations, the history and the relationship to the epidemiological pattern.
2. A rise in titre of the specific antibodies in the blood when acute and convalescent blood samples are compared. That is, when a second specimen of blood is collected *after* the patient gets well—usually 2 to 4 weeks.
3. The pathology as observed at autopsy.
4. The isolation of the virus, usually from autopsy material.

It must be noted that the stools and blood of the acutely ill patient must be studied assiduously to rule out other infections. In only one case so far as we know has the virus been isolated from a living case and that was a prominent scientist at the Rockefeller Institute in New York City, who walked into his own lab ill and who correctly suspected what the illness was. Incidentally, he recovered and had no detectable brain damage—a very remarkable case.

I think you see that the virus laboratory is crucially important, but that it does not help much in the treatment of the particular patient whose specimens are being studied, at least in this serious illness.

Incidentally, I am sure you will be amply repaid for having this fine virus laboratory this summer, since it will probably be a tough session for you, as well as for us. It seems inevitable that there will be many patients suspected of having eastern encephalitis and their accurate, proven diagnosis will be highly important and much sought after by the newspapers. Nobody can know what will happen this year anywhere along this Eastern seaboard with respect to encephalitis or polio or aseptic meningitis, and of course we shall always have an occasional case of encephalitis associated with mumps, measles or some of the rarer infections to keep us on our toes.

In conclusion, let me quote from a paper by Doctor Dingle, entitled, *The Present Status of the Problem of the Minor Respiratory Diseases*:*

"I hope it is apparent that our knowledge of the problem of minor respiratory diseases and their causative agents has been expanding very rapidly. While there is still much confusion and ignorance there is emerging at least some semblance of order. It should be emphasized, however, that so far as we now know all these agents account for a relatively small proportion of the total minor respiratory infections. None of the viruses have been shown to be associated with the ordinary common cold which is still, in terms of occurance, the biggest problem in this field; but that is not the most important aspect of the presnet status of the problem. The most important aspect is that we have experienced another break-through which has expanded our knowledge considerably and will continue to do so in the future. Perhaps the solution of the problem of the common cold will have to await yet another new technological development; we can be sure that it will come."

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*Dingle, J. H.: The Present Status of the Problem of the Minor Respiratory Diseases, AJPH, Vol. 50, 3-293, March, 1960.

● Gram-negative rod bacteremia appears to be on the increase. An awareness of the clinical picture and the therapy of choice should help lessen the mortality.

BACTEREMIA DUE

W. J. Holloway, M.D.*
E. G. Scott, M.T.**

During the past two decades remarkable progress has been made in the antimicrobial treatment of infectious diseases. The incidence and mortality of these diseases, particularly those caused by the hemolytic streptococcus and pneumococcus, have been reduced strikingly. Paradoxically, however, severe infections caused by the staphylococcus and certain gram-negative rods originating from the intestinal tract have increased alarmingly, and many reasons have been advanced for this development.[1,2] Recently the authors have reviewed their experience with staphylococcal bacteremia at the Delaware Hospital;[3] this present report will review 100 cases of bacteremia due to gram-negative bacilli (not including *Salmonella* and *Shigella*) from the same institution during the five-year period 1955 through 1959. The 100 patients all had one or more positive blood culture along with clinical evidence of sepsis. Patients with positive blood cultures but no signs of sepsis were considered to have a transient bacteremia and are not included in this study.

As indicated in Table I, the incidence of gram-negative rod bacteremia has increased since 1956 with a concomitant increase in mortality. An analysis of the low mortality in 1955 suggests that this was due to certain host factors such as lower age group, absence of serious underlying disease (blood dyscrasia and diabetes), and a lower incidence of bacteremic shock.

TABLE II
Distribution of Cases
According to Causative Organism

Organism	*Cases*	*Recovered*	*Died*
Escherichia coli	35	22	13
Klebsiella-Aerobacter	22	15	7
Proteus sp.	16	8	8
Paracolobactrum sp.	9	6	3
Pseudomonas sp.	9	4	5
Bacteroides sp.	4	3	1
Alcaligenes sp.	3	2	1
Herellea sp.	1	0	1
Unidentified rod	1	1	0

Causitive Organism

The distribution of cases according to causative organism is shown in Table II. Coliform bacilli, including the *Escherichia, Klebsiella-Aerobacter,* and paracolon

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*Associate in Medicine, Department of Medicine, Delaware Hospital.

**Bacteriologist, Department of Pathology, Delaware Hospital.

AM-NEGATIVE RODS

TABLE I
Distribution of Cases According to Year

Year	*Cases*	*Recovered*	*Died*
1955	17	16	1
1956	14	10	4
1957	20	9	11
1958	22	15	7
1959	27	11	16
Total	100	61	39

A REVIEW OF 100 CASES

species accounted for two-thirds of the cases, while one-quarter of the infections were caused by *Proteus* and *Pseudomonas* organisms. Although other authors have reported a high mortality from proteus and paracolon bacteremias,[2,4] no significant relationship could be demonstrated in this series. Bacteremia due to *Pseudomonas* showed the highest death rate, but the number of patients is too small to be statistically significant.

TABLE III
Distribution of Cases
According to Age Group

Age in Years	*Cases*	*Recovered*	*Died*
0-1	10	4	6
2-10	4	2	2
11-20	3	2	1
21-30	3	3	0
31-40	4	4	0
41-50	16	12	4
51-60	21	15	6
61-70	16	7	9
71-80	17	9	8
over 80	6	3	3
Total	100	61	39

High Mortality Rates In Infants

Cases are tabulated according to age group in Table III. High mortality rates occurred in infants during the first year of life (6 cases of septicemia of the newborn) and in patients over 60 years of age. Many of the latter died in bacteremic shock, a complication related to the incidence of arteriosclerotic cardiovascular disease in this age group.

TABLE IV
Distribution of Cases
According to Portal of Entry

Portal of Entry	*Cases*	*Recovered*	*Died*
Catheter	28	18	10
Urologic surgery*	8	6	2
Primary pyelitis**	25	17	8
Biliary	6	4	2
Peritonitis	5	1	4
Skin	5	2	3
Infection, female genital tract	3	3	0
Wound	2	2	0
Unknown***	18	8	10

*including cystoscopy
**acute or chronic
***includes newborn

A majority of the patients in this study (63 per cent) were from the medical or pediatric services; only 15 per cent were from the genito-urinary service, while the remainder were divided among the surgical services. As indicated in Table IV, surgery *per se* was not a frequent contributing factor in the enusing bacteremia, though eight urological patients had surgery immediately prior to the onset of their bacteremia. In three of the six cases of suspected biliary tract origin, surgery could be implicated as a causative factor. The five patients with peritonitis had undergone abdominal surgery, but in four of the five cases peritoneal soiling occured prior to operation.

Urinary Tract Infections

More than one-half of the patients in this study had infections of the urinary tract with the same organism isolated from blood culture. Infection as a result of an indwelling catheter served as a portal of of entry in 28 cases of bacteremia; in 25 cases, primary pyelonephritis, with or without obstruction, apparently caused the bacteremia. The catheter infections occurred in patients already in the hospital and may be considered as "hospital-acquired;" in the group with pyelonephritis, infection was already present at the time of admission. There was no appreciable difference in mortality between these two groups.

It will be observed in Table V that two-thirds of the patients experienced shaking chills during the initial stages of their bacteremia. Four cases, of whom three were newborn, did not develop fever, and all four of these patients succumbed. Thirty-four adult patients exhibited changes in sensorium manifested by confusion, disorientation, and lack of cooperation. Seventeen of these had concomitant clincial shock.

Occurance Of Shock

Thirty per cent of the 100 cases suffered bacteremic shock. These patients showed a significant fall in blood pressure along with associated signs of vascular collapse including tachycardia and oliguria. The occurrance of shock was of important prognostic value, since it occurred in 50 per cent of the fatal cases in this study, and only 10 patients who exhibited shock survived this complication. There was no apparent causal relationship between species of bacteria and development of shock, as has been reported in the literature.[2,4]

TABLE V

Distribution of Cases
According to Important Clinical Features

Organism	*Cases*	*Fever*	*Chills*	*Shock*
Escherichia coli	35	33	22	13
Klebsiella-Aerobacter	22	22	14	7
Proteus sp.	16	14	11	4
Paracolobactrum sp.	9	9	6	4
Pseudomonas sp.	9	9	7	1
Basteroides sp.	4	4	2	0
Alcaligenes sp.	3	3	2	1
Herellea sp.	1	1	1	0
Unidentified rod	1	1	1	0
Total	100	96	66	30

Other clinical features less commonly encountered were congestive heart failure (8) and dermal changes (10). The skin changes included cyanosis (5), petechiae (3), and hemorrhagic blebs of *Pseudomonas* septicemia (2).

Laboratory Data

The laboratory data that were evaluated in this study included hemogram, urinalysis, blood urea nitrogen, and blood culture. A majority of patients showed a leucocytosis and left shift. Over two-thirds of the patients were anemic, with hemoglobin less than 11.0 grams. The underlying disease process, rather than the bacterial species, accounted for the anemia. Urinalyses were frequently abnormal, and in all instances when the urinary tract was incriminated as the portal of entry. An expected finding was an elevated blood urea nitrogen in many patients with kidney disease. This reflection of impaired renal function is important with regard to limitations of antibiotic therapy, particularly when administering such agents as kanamycin.

All patients of the series had one or more positive blood cultures, and in many instances the same organism was recovered from the suspected portal of entry. Antibiotic susceptibility tests were performed in all instances by the disc technique, frequently supplemented by tube dilution procedures. *Esch. coli* strains were generally sensitive to the commonly used antibiotics tetracycline and chloramphenicol and likewise to streptomycin and neomycin; the *Klebsiella-Aerobacter* strains were resistant to these agents in less than half the cases. *Proteus* and *Pseudomonas* strains were less sensitive to tetracycline and chloramphenicol; they were most frequently inhibited by neomycin and polymyxin, respectively.

Results Varied

A number of physicians were responsible for prescribing the therapy in this group of patients, and a variety of treatment regimens were used. This of course makes it impossible to outline accurately the results of treatment. Five patients, in whom the correct diagnosis was *not* made, received *no* antibotic, and all five died. Forty-one of the remaing 95 cases received a single agent, including tetracycline, chloramphenicol, streptomycin, or kanamycin, with 12 deaths. Fifty-four patients were treated with a combination of two or more agents, and 13 of these cases died.

Tetracycline or chloramphenicol used as single agents frequently were effective against infections due to *Esch. coli*, but they were less successful in treating other gram-negative rod bacteremias. Four patients treated only with streptomycin expired. Tetracycline combined with streptomycin was used effectively in many of the bacteremias and appeared to be the treatment of choice for gram-negative rod blood stream infection.

Prophylactic Therapy Limited

The recent medical literature[5,6,7] indicates that prophylactic therapy does not prevent subsequent nosocomial infection and that superinfection with a resistant strain may occur. In the present study 28 patients were receiving prophylactic therapy at the time their bacteremia was detected. Twenty-six of the 28 cases were infected with the more resistant gram-negative rods, and in all instances but one, the infecting organism was resistant to the prophylactic agent (or agents) being administered.

No attempt will be made to evaluate the efficacy of pressor agents in this series because of the marked variation in dosage and route of administration. Ten of the 30 cases in clinical shock survived, and 8 of these did so without benefit of pressor drugs. All 20 patients who died in shock were receiving pressor agents; this obviously reflects differences in severity of illness rather than ineffectiveness of pressor agents. Certainly pressor drugs are indicated in bacteremic shock and were more effective in maintaining an adequate blood pressure than whole blood or plasma expanders. Steroid therapy was used too infreqently to permit comment on its efficacy.

SUMMARY

One hundred cases of bacteremia due to gram-negative rods have been reviewed. The majority of these patients were nonsurgical, and the urinary tract was the most common portal of entry. There were 39 fatal cases, and the condition of the host was found to be the most important factor relating to mortality. Critically ill patients were particularly prone to infection from nosocomial sources. Evaluation of antibiotic therapy was difficult; but in general, combined tetracycline and streptomycin appeared to be the best treatment.

Proper therapy of urinary tract infection and the avoidance of prophylactic antibiotics is recommended to reduce the incidence of gram-negative rod sepsis.

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● **Potassium therapy when properly instituted can be lifesaving; otherwise it can mean disaster.**

POTASSIUM THERAPY

John J. Graff, M.D.*

Potassium therapy is selected for review because of the hypothesis that it is the least successfully administered parenteral therapy. With the accuracy usually possible, this treatment can be improved to a level achieved in other electrolyte therapy.

A proper understanding of the basic physiology of electrolyte therapy is a fundamental necessity. Application of general rules of thumb or routine orders in handling complex problems requiring this therapy can lead to disaster—or at best—underestimate the value of this aspect of patient care.

Valuable Concept

One of the valuable concepts that apparently needs re-emphasis is the inverse proportion of fat to body water. One of the factors that increases anesthesia risk in obese patients is their relatively low proportion of body water that makes any appreciable disturbance in water loss potentially critical.

Review of normal values for various electrolytes in extracellular and intracellular spaces shows how little of the total value of potassium in the body is available for ready measurement as extracellular. For purposes of calculation of therapy this is not a serious obstacle because of a constant relationship existing between the two within time limitations.

Significant Aspects

The first precaution is that laboratory values must be interperted in the light of clinical findings. It is disturbing to hear discussions of patients where it is inferred the laboratory values were treated until they improved, while the patient grew steadily worse. My own experience has been that improvement of the patient usually precedes any significant change in abnormal laboratory findings. The small proportion of extracellular potassium explains why a marked change in potassium deficiency could be corrected with little change in the usually measured extracellular values.

Another significant factor that must be remembered is hemoconcentration. A detailed review of a fatal case of aortic thrombosis suggests that only an elevated BUN and increased urine specfic gravity can help explain the apparent normal values of electrolytes, hemoglobin, etc., in a moribund patient with hemoconcentration.

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A general plan of electrolyte therapy must be followed before specific therapy such as potassium should be evaluated. First, any volume deficit should be corrected next, any osmolar deficit should be treated, and acid-base imbalance that needs therapy should be cared for. Then specific treatment like potassium therapy can be initiated.

The signs and symptoms of potassium therapy are often those caused by an extracellular deficit and this makes laboratory evaluation frequently significant. A determination of chlorides and bicarbonate can be done easily and accurately and an estimation of the sodium level obtained from them. An accurate determination of both sodium and potassium can then be determined after therapy is already started by the use of the flame photometer. Some years ago, I remember a discussion of potassium therapy in which a projection of its potential importance was linked to a quick and accurate method of calculation. Now that this has been established, I suggest that we can expect a similiar valuable contribution from determination of calcium and magnesium values in specfic instances.

General Therapy Plan

The general plan of therapy is to treat volume and osmolar abnormalities. This may, at times, require the use of hypertonic solutions although most often hypotonic solutions will be employed. It would not be usual that any acid-base abnormality required specfic treatment. Specific ion treatment could now begin.

A time factor should be mentioned especially in the case of potassium. An attempt should be made to correct a deficit in a period of 24 to 72 hours. A general rule would be to lean towards undertreatment in this field because too energetic treatment can lead to disaster.

The clinical course the patient presents must be carefully watched. There is then much less confusion in interpretation of laboratory findings; they can usually be understood, and often can be of inestimable value.

A routine use of potassium in the uncomplicated case is outlined. On the day before operation with no oral feeding of the patient, a total of eighty milliequivalents of potassium are administered. I deplore ordering potassium in any way but specified number of milliequivalents and wonder how much thought went into the order to "add an ampule of potassium to the IV."

No potassium is given on the day of operation. On the first post-operative day eighty milliequivalents of potassium are given with the intravenous fluids. On the second post-operative day if there is retention and vomiting, laboratory values are determined and eighty milliequivalents of potassium are given. The rate of therapy is not over eighty drops per hour or two hours per liter. A faster rate could raise the extracellular level over seven milliequivalents per liter and cause the heart to stop in diastole.

Ringers Solution

The role of Ringers solution is mentioned to point out that from the consideration of its postassium value, it is just about equivalent to normal saline. Interpretation of the electrocardiogram at various potassium levels must be made in the light of sodium and calcium values because only the total changes are seen in the electrocardiogram. Any attempt to evaluate potassium levels by measuring T-wave levels can never approach the accurate levels of the flame photometer.

Potassium deficiency is seen clinically in dietary deficiency, polyuria, vomiting or other gastrointestinal losses, protein formation, glycogen formation and ACTH administration. It is seen post-operatively in urine losses, where the kidneys do not conserve it as they do sodium. Potassium is decreased in extracellular fluid when sugar and insulin therapy cause an increase in the intracellular fluid potassium.

The diagnosis of potassium deficiency is made in the case of the patient with diarrhea, ileostomy or wet colostomy, with an abnormal EKG at times, when a significantly lowered level of serum potassium is reported. Signs and symptoms are usually non-specific. It is suggested that potassium deficiency be considered in any case of low chlorides and high CO_2 that is not corrected by glucose and saline administration.

Prevention of potassium deficit is accomplished by administration of potassium if there is loss or its oral intake is reduced significantly. The difficult case may require 160 milliequivalents or even more to cause clinical improvement. One precaution is to avoid potassium therapy completey in anuria.

Potassium intoxication is treated by minimizing catabolism with low protein diet, high in carbohydrate, antibiotics to control infection and resulting fever, insulin, peritoneal lavage and artificial kidney.

Potassium therapy is an important and valuable aid that can be administered scientifically.

Contributors Column

John F. Hughes, M.D., Jefferson Medical College, is certified by the American Board of Surgery and is on the surgical staff of Wilmington's four general hospitals and Chief to St. Francis Hospital. Dr. Hughes takes an active part in teaching programs and is Chairman of the House Staff at both St. Francis and Wilmington General Hospitals.

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George J. Boines, M.D., whose main interest has been in general practice and physical medicine and rehabilitation, has been influential in establishing Delaware's Virus Laboratory and serves as its Director. Dr. Boines is a member of the Pennsylvania Academy and Congress of Physical Medicine and Rehabilitation.

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John J. Graff, M.D., Jefferson Medical College '42, received his preceptorship training at Valley Forge Hospital, (under R. Douglas Sanders, M.D.), and at Delaware Hospital. Dr. Graff is a member of the American Board of Anesthesiology and is Chief of Anesthesiology to St. Francis Hospital and Consultant to the V.A. Hospital, Wilmington.

Roscoe P. Kandle, M.D., Jefferson Medical College and M.P.H., Johns Hopkins University, served in various divisions as District State Health officer in New Mexico, Louisiana and New Jersey before assuming the post of Field Director of the American Public Health Association.

During this period, Dr. Kandle made a survey of public health and administration setups in more than thirteen states and modernized the structures of both the Philadelphia and New York City public health and sanitary codes and was appointed First Deputy Commissioner of Health, New York City, in 1954 — a post which he held until assuming office as State Commissioner of Health for New Jersey.

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C. A. D'Alonzo, M.D., University of Virginia Medical School '37, is a Wilmingtonian who has been engaged in the Du Pont Company's preventive medical program for employees since he joined them in 1939 — with time out to serve as flight surgeon in the Army Air Force and later as section Chief at Fort Bragg Regional Hospital — to his present post as Assistant Director of the Medical Division.

Dr. D'Alonzo is the co-editor of *Modern Occupational Medicine,* published in 1954, (the second edition of which is now in print), and the author of *The Drinking Problem and Its Control,* published during the past year.

THE USE OF TRYPSIN TROCHES

In Tonsillitis, Pharyngitis and Laryngitis

● Sore throat, first cousin of the common cold, is high on the list of causes of short term disability. Anything that will reduce the period of incapacity would be most valuable.

George J. Boines, M.D.*

When a patient complains of a "sore throat," it can mean any one of a number of diseases in the area of the throat. A good diagnosis depends on a close examination of the throat to determine the areas and degree of involvement. Either the tonsils, the pharynx or the larynx may be affected; or all three of these anatomical structures may be involved simultaneously. The younger patient with any of these involvements seldom complains of discomfort in the throat, therefore, it is essential that this area be examined routinely so that the diagnosis may not be missed.

Pharyngitis and laryngitis may be either acute or chronic—which can be determined from the history and clinically. Tonsillitis may be any one of the various varieties, depending on the degree of involvement of the tonsil.

Acute Pharyngitis

In acute pharyngitis, the throat symptoms are usually mild—the only symptom being slight pain or dryness in the throat. In the more severe cases, the voice is usually husky, and the patient usually makes constant efforts to clear the throat of accumulated mucus.

Chronic Pharyngitis

In chronic pharyngitis, examination reveals redness and congestion, particularly of the lateral walls of the throat. The uvula may be swollen, lengthened and so edematous, as to be almost translucent in appearance.

Acute Laryngitis

In acute laryngitis the voice first becomes husky then hoarse. In severe cases, the throat feels uncomfortable, and slight pain may be experienced, especially when trying to talk. Cough may or may not be a part of the symptoms, however, if cough is present, it is usually non-productive.

Chronic Laryngitis

Considerable swelling of the inter arytenoid area may be observed in chronic laryngitis. The vocal cords will be reddened, possibly slightly swollen and rounded in appearance with some mucus or mucopurulent pus on their surface. There will probably be general redness and sometimes swelling of other parts of the larynx.[1]

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Acute Tonsillitis

This clinical entity is defined as "a febrile upper respiratory illness in which inflammatory changes in the tonsil predominate the clinical picture."[2]

There are various types of tonsillitis; the diagnosis is made on the extent of involvement of the tonsils.

1. *Catarrhal tonsillitis*: In this type the involvement of the tonsil is superficial and a relatively mild infection of the surface epithelium is evident.
2. *Follicular tonsillitis*: The morbid changes in this type involve the crypts which become filled with debris consisting of epithelial cells, bacteria and leukocytes. This debris appears in the mouths of the crypts as discrete spots of exudation.
3. *Parenchymatous tonsillitis*: In this type of tonsillitis the substance of the tonsils is affected to the extent that the entire gland becomes congested. This form is generally attended with high fever, severe pain, headache, dysphagia and suppuration.
4. *Membranous tonsillitis*: The etiology in this type may be diphtheria, infectious mononucleosis, or streptococcal. It is essential to differentiate these diseases from those described above.

SYMPTOMS

Acute tonsillitis begins with malaise, a sensation of chilliness, headache, anorexia and fever, which may be mild or elevated, especially in children. In the young patient, acute tonsillitis rarely produces any complaints or discomfort or pain in the throat. Diagnosis may be missed unless the throat is examined as a routine measure. Older patients usually complain of a fullness in the throat during the early stages of the disease. As the inflammation progresses, the tonsils become enlarged and produce an obstruction in the throat, thus increasing anorexia because of pain.

Acute Laryngotracheitis

This condition occurs almost exclusively in childhood. It has been defined as "an inflammation of the larynx and trachea with subsequent edema resulting in variable degrees of obstruction to the airways."

The onset of this disease is sudden, with inflammation of the membranes, severe cough, dyspnea and cyanosis. A thick tenacious exudate later appears; this becomes gummy and purulent, obstructs the bronchial tree and causes atelectasis. Bacteriologic studies are necessary to distinguish this disease from laryngeal diphtheria and laryngismus stridulus. The clinical picture may be confused with that of bronchopneumonia.

Diagnostic Criteria

In addition to the above signs and symptoms, the diagnostic criteria for laryngotracheitis are:

1. *Pulse rate*: The initial pulse rate may be misleading because of the existing apprehension; therefore, it is important to get the pulse rate with the patient under sedation.
2. *Respiratory rate*: This is also influenced by apprehension and varies as does the pulse rate.
3. *Restlessness*: This is probably the most important prognostic sign in making a clinical assessment.
4. *Lung ventilation*: The degree of air entry into the lungs is a clue to the severity of obstruction.

Liquefaction of the secretions in the respiratory tract is of importance in the management of this condition. Sedation, to reduce anxiety and fear, is useful; however, caution is stressed not to sedate too profoundly for fear of masking the signs of progress of the disease.

Pathology Indications

It is apparent that in tonsillitis, pharyngitis, laryngitis and laryngotracheitis, bacteria, inflammation, edema, and thick tenacious, purulent or mucopurulent exudate represent the pathology. The tenacious, purulent or mucopurulent exudates act as barriers to healing,[4] and unless these barriers are removed, local therapy can hardly be expected to be effective. It is recognized that any area of acute localized inflammation contains viscous exudate. Thus, it is essential to remove these exudates which act as a medium to enhance bacterial growth, so that antibacterial treatment may be effective, and healthy tissue be exposed in order that healing be accelerated.

Trypsin has been used as digestant of sputum and other body fluids preliminary to examination for acid-fast bacilli.[5] The mucolytic, anti-inflammatory and anti-edema capacities of trypsin have been established and reviewed,[6] and will not be dealt with in this report.

The histopathological picture seen in tonsillitis, laryngitis, pharyngitis and laryngotracheitis established a rationale for our clinical use of a troche containing trypsin (1.0 mgm), benzocaine (5.0 mgm), neomycin sulfate (5.0 mgm), and zinc bacitracin (50 units).

Material And Methods

The study group was composed of fifty patients representing twenty-four females and twenty-six males. A diagnosis of acute tonsillitis was made in 20 patients; laryngitis in 10 patients; pharyngitis in 14 patients and laryngotracheitis in 6 patients.

Ten patients with acute tonsillitis and five patients with acute laryngitis were treated with troches containing a non-narcotic anti-tussive, three antibiotics and benzocaine—one troche at four hour intervals for three or four doses daily for a maximum of eight days.

The remaining 35 patients were treated with troches containing trypsin neomycin sulfate, zinc bacitracin and benzocaine—one troche at four hour intervals for three or four doses daily. In the cases of laryngotracheitis, mild sedation, steam inhalation and plenty of fluids were ordered in addition to the trypsin troches.

Results

In the fifteen patients treated with the troche containing anti-tussive, antibiotics and benzocaine, satisfactory pain relief occurred in 18 to 24 hours, and the involved areas were "clean" in an average of six days.

In the tonsillitis, pharyngitis, and laryngitis cases, 29 patients, treated with trypsin antibiotics, benzocaine troche, satisfactory pain relief was obtained in an average of seven hours, and the involved areas were "clean" in an average of four days.

The trypsin troches were used as adjunct therapy in the six patients with laryngotracheitis. It is felt that these troches accelerated the recovery of these patients by improving their lung ventilation. Breathing became easier and the cough, which was spasmodic and distressing in type, was considerably modified. There is no doubt that good nursing care played a major role in the recovery of these patients.

No side effects or untoward reactions were observed or reported.

Discussion

In discussing the diagnosis and treatment of chronic post-nasal discharge, Persky[7] concluded that, "As an addition to many therapeutic measures, trypsin troches are recommended in obstinate cases, where there is a thick purulent type of secretion, and where one finds the hypertrophic lymphoid patches either in the nasopharynx, the pharynx, or about the base of the tongue." He felt that the trypsin had an effect of causing liquefaction of the fibrin and mucous secretions; the neomycin and bacitracin exert a bacteriostatic action reducing the irritative nature of the discharge, and that lymphoid masses were reduced in size and even disappeared in certain areas.

Upper respiratory symptoms seen with such acute conditions as adeno-virus infection, Asian influenza, and croup-like hemadsorption viruses seem to subside faster when trypsin troches are used as an adjunct to the therapeutic regimen.

Frequent distressing cough, arising from irritation of the posterior tongue by an edematous uvula, is readily relieved by the trypsin troches.

Patients, including children, who complained of soreness and discomfort in the throat interfering with swallowing, obtained rapid relief of these symptoms following trypsin troche treatment, enabling them to take food and liquids without difficulty.

Comment

Several children objected to the taste of the trypsin troches when treatment was started, but with a little coaxing they continued to use them, and when relief of soreness of the throat was experienced, this difficulty disappeared.

We want to emphasize that the trypsin troches were not used for the treatment of systemic diseases, but only as an adjunct to relieve the local congestive signs and symptoms of certain histopathological conditions associated with sore throat.

Summary And Conclusion

The pathology of tonsillitis, pharyngitis, laryngitis and laryngotracheitis is reviewed.

Ten patients with a diagnosis of tonsillitis and five with laryngitis, were treated with a troche containing an anti-tussive agent, three antibiotics and benzocaine. Relief of pain was obtained within 18-24 hours, and the affected areas were "clean" in an average of six days.

Twenty-nine patients with tonsillitis (10), laryngitis (5), and pharyngitis (14) were treated with a troche containing trypsin, two antibiotics and benzocaine. Relief of pain was obtained within an average of seven hours and the affected areas were "clean" within an average of four days.

The trypsin troches were used as an adjunct to other therapeutic measures in six cases of laryngotracheitis. Breathing became easier and the cough was appreciably modified. Good nursing care was a prominent feature in the management of these patients.

Our results suggest that troches containing trypsin, neomycin sulfate, zinc bacitracin and benzocaine are effective in the treatment of tonsillitis, laryngitis, pharyngitis. It would seem that the trypsin troches enhance the therapeutic measures directed toward upper resiipiratory symptoms associated with such acute conditions as adeno-virus infection, Asian influenza and croup-like hemadsorption viruses. The trypsin troches represent a new approach to the treatment of chronic postnasal discharge, and are recommended as an addition to the many therapeutic measures for the treatment of obstinate cases.

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Emergency Care Cards Available

Over 22,000 Emergency Care Cards have been distributed by the Medical Society of Delaware to physicians for their patients. The Society has a reserve supply of these health record cards on hand which will be sent on request at any time.

● Esophageal hiatus hernia is a famous mimic, elusive to the diagnostician, and a therapeutic problem. There is little doubt but that surgical repair should be considered for all but the smallest, asymptomatic lesions.

ESOPHAGEAL HIATAL HERNIA

Case Report

J. F. Hughes, M.D.*

Esophageal hiatal hernia occurs in 2-9% of patients with upper gastro-intestinal symptoms. This is second to duodenal ulcer in frequency. There are two types of hiatal hernia; first, sliding hiatal hernia: this is a cephalad displacement of the cardia above the diaphragm. Second, para-esophageal hiatal hernia: the cardiac end of the stomach remains below the diaphragm. The symptoms are essentially due to reflux esophagitis. These are heartburn, acid eructations, substernal fullness or pain, dysphagia, and sometimes hematemesis. Complications are ulceration, incarceration, stricture, hemorrhage and strangulation with perforation. Strangulated diaphragmatic hernia is a complication that is rarely reported in the medical literature. The author reported a case January, 1955, in the Delaware Medical Journal.[1] This case was the tenth reported case.

The diagnosis is made from the symptoms and x-ray studies. Cholecystitis, coronary artery disease, peptic ulcer and pancreatitis should be excluded. Surgical repair of the hernia is a treatment of choice. Medical management may relieve the symptoms but does not correct the underlying abnormality. Transthoracic repair of the hernia, as described by Allison, is the most widely accepted method.

Case Report

The patient, a 49 year old white woman, conscious, ambulatory and in no acute distress, was admitted to the St. Francis Hospital. She gave a history of epigastric fullness and discomfort for about one year. The pain had been off and on, in the epigastrium.

She had had no vomiting. She had not had too much trouble until one month prior to admission when the pain became worse. She was suspected of having a coronary artery thrombosis. The pain occurred off and on and was worse after heavy meals. She had some nausea. The pain started in the epigastrium and radiated, at times, to the left hypochondrium. A para-esophageal hiatal hernia was found on x-ray study. In a previous medical history she had had two herniorrhaphies, a cervical lump removed and minor pelvic surgery performed. A review of the systems was essentially negative except for urinary frequency which occurred at night.

On physical examination, the patient, of average size, was fairly nourished, fairly developed in no distriess, and had a blood pressure of 150/80. Examination of the head and neck, thorax, revealed no abnormal findings. Abdominal examination revealed a soft, non-tender area. The liver, spleen and kidneys were not palpable.

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*Department of Surgery, St. Francis Hospital.

The admission blood count was 4,000-000 R.B.C., 8,200 W.B.C. per square centimeter, and the hemoglobin was 79% or 12 grams. The differential count was 78% segmented polymorphonuclears, and 22% lymphocytes. Urinalysis was negative. Electrocardiogram was within normal limits.

X-ray examination of the chest was negative.

Operation was performed January 4 1960 through a transthoracic approach. The left 8th rib was excised. After exposure of the hernial sac into the left portion of the mediastinum, it was found to be about 5cm. in diameter and the cardiaic end of the stomach was present in the hernial sac. The hernial sac was thoroughly exposed and then the hernial sac was divided. There was no sac posterior to the esophagus. Then a counter incision was made in the tendinous portion of the left diaphragm, and a tape was passed through this opening and around the lower esophagus. Traction was applied to this tape. The right crus of the diaphragm was exposed. The left phrenic nerve was crushed, paralyzing the left diaphragm. A tape was passed around the esophagus, above the diaphragm, and used for retraction, then the right crus of the diaphragm was closed posterior to the esophagus with #0 silk sutures. This defect in the diaphragm was closed so that the tip of the little finger could be admitted around the esophagus. The anterior portion of the esophagus was fixed to the diaphragm with #00 chromic suture. Then the left pleural cavity was flushed with saline and the lung was re-expanded. A large #30 French Robinson catheter was inserted to the pleural cavity and attached to an underwater seal. The chest was then closed. The patient withstood the procedure well and left the operating room in good condition. The patient received 600,000 units of Crystacillin, ½ gram of Streptomycin every 12 hours until January 14, 1960.

She was kept on a liquid diet for two weeks and then cooked cereals were permitted. The chest drainage tube was removed on the fifth post-operative day. She was given a soft diet for about one week after that, and gradually her diet was increased to include regular diet.

In the early postoperative period she received 100 mgm. of Demerol p.r.n. every three hours. She did complain of a great deal of pain for a few days after the operation. Later on she was given tranqualizers and she was more comfortable. However, it took about three months before she was fully recuperated from the operation and was able to eat regular diet food. A subsequent G.I. series taken on January 27, 1960 revealed no recurrance of the hernia.

Conclusion

This patient had a symptomatic hiatal hernia which caused her great concern until the condition was properly diagnosed. Since there is a recurrence rate of hiatal hernias up to about 30%, it is imperative that the best repair possible be carried out. In my opinion, the most satisfactory way of repairing a hiatal hernia is through the chest where the tissues are directly exposed. After repair, the patient should not be put on solid food too soon. The patient should be permitted to dilate the new opening gradually, through the diaphragm. This can be done by careful increase in the diet. It usually takes two to three months for the patient to recover from the operative repair. During the postoperative care, tranqualizers or Banthine are helpful. I believe it is much better to surgically repair a symptomatic hiatal hernia as soon as it is discovered in a patient, instead of trying to persevere with medical management until the hernia becomes so big or complicated that surgical repair is imperative. By this time, the patient will have other pathological conditions to interfere with the proper convalescence after surgery.

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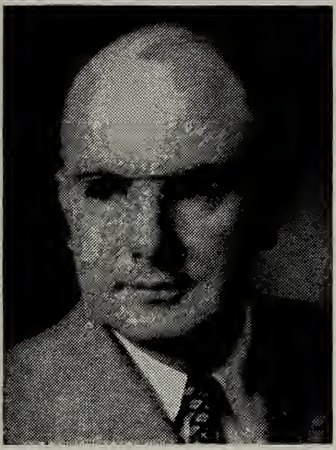
President's Page



"Why does the A.M.A. always oppose things but never offer positive suggestions?"

The above is frequently used and is effective propaganda against us since the A.M.A. is made up of groups of physicians such as our own medical society.

The A.M.A. works diligently to inform the profession and the public in regard to health matters. If we read the J.A.M.A. in a superficial manner it is easy to learn what is going on.

The A.M.A. has opposed the Forand Bill because it is against the American way of doing things. It will be bad for us to have political medicine but will be worse for our patients. The A.M.A. favors medicine at local levels, with federal help where needed as proposed by the Mills bill.

If we read the A.M.A. News we find a ready source of facts regarding pending legislation affecting health matters and activities of the A.M.A.

Recent bills before Congress include many approved by A.M.A. and few opposed. The ones opposed are the well known Forand Bill and the bill to include physicians in social security. Surveys show that the Keogh bill in Congress (HR) is much more suitable to our needs than the social security for physicians' bill.

In this my last president's page, my thanks and best wishes are extended to all the members of the Medical Society of Delaware, and to the executive secretary and his staff. This year has been a most interesting and a very pleasant experience.

James E. Marvil

President, Medical Society of Delaware

In Brief

New Reseach

A new service, *Professional Market Research,* conducts studies for pharmaceutical manufacturers, direct mail houses and medical journals which should interest the medical profession. Most of the research will be conducted by mail to small, carefully selected physician samples. Respondents' names will be kept confidential. Direct inquiries to: Mark K. Dresden, Jr., Research Director, 117 So. 17th Street, Philadelphia 3, Pa.

Magic Amulet

The "Medic-Alert" bracelet which serves as a protection—in case of accident—for individuals who have physical conditions demanding special treatment, is proving popular. The inscription on the back of the emblem carries a message related to the particular health problem of the wearer. Hospitals, health organizations and service clubs throughout the nation are distributing these medallion bracelets to people who need to be safeguarded in case of emergency. Complete information may be obtained by writing to: Medic-Alert Foundation, 1030 Sierra Drive, Turlock, California.

NLN Fellowships

The Fellowship Program of the National League For Nursing, in existence since 1955, has made possible a total of 147 Fellowships—117 to candidates for the doctor's degree and 30 to candidates for the master's degree. Application forms for the 1961-62 program will be sent on request by writing: The National League for Nursing, Inc., 10 Columbus Circle, New York 19, N.Y.

Survey By MDHBA

The Journal of the Medical-Dental-Hospital Bureaus of America came up with some good answers to the current cry "What is wrong with medicine?" Here they are: 1. The blame for the increased longevity of the human race can definitely be traced to the medical profession. 2. The social problems created by healthy babies, and by mothers who survive pregnancy in childbirth can be charged directly to modern medical care. 3. Organized medicine, the hospitals, the pharmaceutical companies, and research organizations are involved in a joint conspiracy to pamper the people of this country with the best medical care available. 4. Tremendous sums have been expended for hospitals, which sick people are encouraged to use. 5. Doctors appear to be somewhat backward when one considers that they spend six to eight years in college, followed with internship and a couple of years' hospital residency, and then have to keep on their toes with all that's new in medicine. 6. The medical profession has failed to encourage "do-it-yourself activities." A careful check of hardware, appliance and ten-cent stores fails to turn up a single "do it yourself" brain surgery kit.

Services Honored

Dr. M. A. Tarumianz poses with the bronze bust of himself which was presented to the Hospital for the Mentally Retarded at Stockley as a tribute to his more than forty years of service to the State as a psychiatrist and psychiatric institutional executive. A $200,000 project is now in progress at the hospital, which will serve when completed, as a rehabilitation center for the treatment and training of the physically and mentally retarded.

Personal Glimpses

Martin B. Pennington, M.D., was appointed to *Liaison Committee on National Defense*, American Academy of General Practice . . . Joseph A. Elliott, M.D., appointed councilman-at-large from Laurel's Third Ward by Mayor Marvil L. Lynch . . . James M. Hofford, M.D., director of the Pulmonary Function Laboratory Delaware Hospital received a grant from the Delaware Tuberculosis and Health Society . . . Arnold H. Williams, M.D., showed a film at the Laurel Rotary Club entitled *More Than a Physician* produced by the DuPont Company—outlining the functions of an accredited radiologist . . . James Beebe, Jr., M.D., was named vice-president, board of directors of the Beebe Hospital; James Beebe, Sr., M.D., was re-elected president . . . Harold Tarrant, M.D., and John H. Foulger, M.D., are participating in the planning for Diabetes Detection Week, November 13 to 19 . . . Lemuel C. McGee, M.D., will preside at the 20th Annual Congress on Industrial Health in Charlotte, N.C., in October and will speak on *Occupational Health Programs: Meaning, Scope and Contents* . . .

The Arthritis Hoax

The Arthritis and Rheumatism Foundation again urges arthritis sufferers to beware of fallacies and fancies regarding cures which are misleading and patently dishonest. They emphasize that a real cure for arthritis has not yet been found. The *Arthritis Hoax*—a booklet issued by the Public Affairs Committee may be obtained for 25 cents by writing this non-profit educational organization at 22 East 38th Street, New York City.

Alcoholism Grant-In-Aid

In response to a growing need, a new grant-in-aid program for research on alcoholism and related subjects is being offered by Licensed Beverages Industries, Inc. $500,000 has been made available for a five year program through which relatively small research grants may be arranged quickly for competent scientists working in the field of alcoholism. Application forms may be obtained by writing: Scientific Advisory Committee, Licensed Beverage Industries, Inc., 155 East 44th Street, New York 17, N.Y.

So Far So Good

An extract containing a living virus which causes leukemia—taken from the brains of human beings who have died of this disease—may prove the basis for an anti-cancer vaccine. A team of researchers at the Hektoen Institute, Cook County Hospital, Chicago, have been conducting an experiment which they hope will be a step toward this goal. Fourteen prisoners, given shots of this extract, developed protective antibodies. None of these men have come down with blood cancer or shown any ill effects in the one and a half years since the experiment started.

A Second

The Future Nurses Club at the John Bassett Moore High School, Smyrna, received its national charter—the second issued in the State of Delaware. Members of this club, fostered by the Woman's Auxiliary to the Kent County Medical Society, carry on a wide and varied program in "service to others."

Medical Legacy

Peter Borkowski of Wilmington, a retired employee of the Pennsylvania Railroad who died recently, financed the education of his four surviving sons: Dr. Charles P., a surgeon; Dr. Adolph F., internist; Dr. Winslow J., neurologist, and Dr. Bernard B., also a surgeon—all practicing in Philadelphia, Pa.

Accouchment Aid

A suction device that can be inserted into the birth passage and attached to the baby's head will be evaluated in a major test by Army and Navy doctors. The device, developed in Sweden and obtainable there, would be used as a substitute for forceps in delivery.

Israel Study In Preventive Medicine

A travel scholarship for research in preventive medicine at the Hebrew University of Jerusalem has been awarded to Miss Naomi Bluestone of Wilmington, a third year student at Women's Medical College, by the Philadelphia Women's Division, American Friends of the Hebrew University. Miss Bluestone will stay in Israel for two months, study with Dr. Michael Davies, professor of preventive medicine, and tour the country.

Tuberculosis And Rehabilitation

A total of 54 former tuberculosis patients were returned to gainful employment and 90 new patients given a start toward normal community life last year in the program of vocational rehabilitation sponsored pointly by the Delaware Anti-Tuberculosis Society and the Rehabilitation Divison of the Board of Vocational Education.

Editorials

IN THE GOOD OLD SUMMERTIME—

In this *Journal* of July, 1958 under the title of *Salt Restriction and Summertime,* we discussed the low salt syndrome. This condition is manifested by anorexia, nausea, vomiting, apathy, drowsiness, restlessness, confusion, convulsions, coma, musular weakness, cramps, tachycardia, and even shock. It frequently occurs in patients whose heart failure, previously controlled by mercurial diuretics, suddenly fails to respond to these agents. A warning was issued at that time to be cautious in regard to salt restriction and diuretic administration in the summertime.

Recent studies* have emphasized that hyponatremia may not necessarily be due to a lack of salt but rather due to dilution of a normal or even excess amount of salt by an excess of fluid. In such an instance it will not only be useless but even harmful to give the patient additional salt. In such a condition it is imperative to produce a state of hyperchloremic acidosis. This has been accomplished at times by the use of ammonium chloride, calcium chloride, and/or acetazoleamide. Following their use, patients previously refractory to mercurial diuretics frequently obtained an excellent response to their administration. These salts are not without their unpleasant effects: effects sometimes so severe as to preclude their use. Recently, patients unable to tolerate the previous medications have been found to tolerate a chloride of a basic amino acid, L-lysine monohydrochloride.

Lysine has been developed by the duPont Company and elsewhere in this issue of the *Journal* is an article by Dr. D'Alonzo on the subject. Lysine has all of the desirable features of the agents previously employed and none of the undesirable effects. The only minor disadvantage is that Lysine contains only 5 mEq. of chloride ion per gram as contrasted with 18 mEq. and 14 mEq. per gram of ammonium and calcium chloride respectively. While this necessitates a larger dose of Lysine than of the other two salts, the fact remains that patients can tolerate this dose whereas they frequently were unable to tolerate smaller doses of the other salts. Lysine has been given in doses of 10 Gm. four times daily in tomato juice. Some patients have an initial diarrhea but there have been no other adverse effects noted.

Luckey and his colleagues* have stressed the danger of giving intravenous hypertonic sodium chloride to any patient who has been or is in a state of cardiac decompensation. None should take issue with this statement. The fact remains, however, that there is an occasional patient, particularly in the summertime, who has become refractory to diuretic therapy who obtains a beneficial response following several days of a normal diet.

A WORD OF WARNING—

The alcholic will lie and steal to obtain a drink. The narcotic addict will lie, steal, and kill. In view of the recent episodes involving theft of narcotics from physician's bags, it would be wise for all physicians to be careful in answering any night calls. Be sure you know who is calling. In case of doubt, notify someone, preferably the police, of your intended whereabouts.

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*Luckey, E. H. and Rubin, A. L.: The correction of hyponatremia in congestive heart failure, Circulation 21:229, 1960.

*Rubin, A. L., Spritz, N., Mead, A., Herrmann, R. A. Braveman, W. S., and Luckey, E. H.: The use of L-Lysine Monohydrochloride in combination with mercurial diuretics in the treatment of refractory fluid retention, Circulation 21:332, 1960.

Auxiliary Affairs

HIGHLIGHTS OF THE NATIONAL CONVENTION

The thirty-seventh annual convention of the Woman's Auxiliary to the American Medical Association was held in Miami Beach, Florida, June 13-16. Among the registrants were 9 national presidents, 45 state presidents, 23 national delegates, 234 state delegates, 66 alternates, and 809 members. Delaware was represented by Mrs. Bayard R. R. Vincent, delegate; Mrs. John J. Lazzeri, alternate, and Mrs. Lemuel C. McGee, Presidential delegate.

Guest speakers at the House of Delegates sessions were Dr. Edward L. Bortz, Philadelphia; Mr. John Bach, Division of Communications, A.M.A.; Dr. McKinnie L. Phelps, Denver, Vice Chairman A.M.A. Council on Legislative Activities; Dr. Leo Bartemeier, Baltimore, and Dr. Glen Shepherd, Assistant Secretary, A.M.A. Council on Medical Education and Hospitals. Dr. Louis M. Orr, A.M.A. President for 1959-1960, and Dr. E. Vincent Askey, President-elect of the A.M.A., spoke at a luncheon honoring the past presidents of the auxiliary.

State reports, stressing a special activity, were limited to two minutes. It was noted that most auxiliaries concentrate on recruitment for medical careers.

Entertaining as well as enlightening presentations were given by committees on Civil Defense and Safety. For the latter, a water safety demonstration was given at the Hotel Deauville pool by members of the Dade County Chapter, American Red Cross. Civil Defense presented a skit emphasizing thought, skill and imagination in preparing the home to meet any type of emergency.

To the American Medical Education Foundation, the auxiliary presented a check for $170,230.10. This represents an increase of approximately $30,000 over the amount given last year. Two leading contributors were the auxiliaries of Ohio ($19,000) and Texas ($17,000). Tennessee received the Ethel Gastineau Trophy for showing the greatest increase over previous contributions. (Though Delaware reached a new high in her A.M.E.F. fund, the contribution amounted to only $3.00 per capita.)

Alaska won a place on the *Bulletin* Honor Roll. The new state reported a membership of 51, and a 100 percent subscription to the *Bulletin.*

One of the changes to be noted for the coming year is that of title for the Committee on Paramedical Careers Recruitment. According to the recently passed amendment to the By-Laws (Article 11, Section 1), the name is now to read Committee on Health Careers.

Another program activity recommended by the national auxiliary is in the field of rural health. Information will be circulated as the project develops at the national level.

Meeting dates of the national convention have been set for the next five years as follows: the last two weeks of June, 1961, New York; 1962, Chicago; 1963, Atlantic City; 1964, San Francisco, and 1965, New York.

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PREVENTION of MENTAL RETARDATION from PHENYLKETONURIA

FLOYD I. HUDSON, M.D.*

There is much in the literature of recent years pointing up the relationship between phenylketonuria and mental retardation. This easily recognized disease is one cause of mental retardation which is readily amenable to prevention by the physician and family. I shall not discuss the literature at length, but will give some information which will be helpful in the prophylaxis of this disease.

Phenylketonuria is an abnormality of metabolism which is transmitted through the genes. Infants born with this condition are normal in all respects but are unable to metabolize fully the essential amino acid phenylalanine. The result in unrecognized cases is an accumulation of phenylalanine in the blood and other tissues. This accumulation causes toxicity, primarily within the central nervous system. A mental retardation occurs which is permanent unless an early diagnosis is made and treatment promptly begun. It is highly important that the disease be discovered in the first few weeks of life if mental deterioration is to be prevented. Any physician can do a simple test to determine whether there is a possibility of the disease in any infant.

Phenylketonuria can best be detected during the second week of life. Simply place one drop of ten per cent (10%) aqueous solution of ferric chloride on the diaper which has been soiled with urine. Should a blue-green color appear in a matter of seconds, the test is positive. A yellow stain on the diaper signifies a negative test. Cases in which a positive reaction occurs should have a blood phenylalanine determination before treatment is started.

The treatment of the disease is dietary. It is necessary to prescribe a diet low in phenylalanine to maintain normal limits of this amino acid in the blood. (The Board of Health's nutrition consultant will be glad to assist any physician upon request.) Repeated blood tests should be made periodically to assure that treatment is effective. Normal mental growth, without deficiency, can be expected in patients cared for as stated above. A special diet should be continued at least until the child enters school.

The frequency of occurrence of this disease is small. In institutions for mentally retarded, one per cent (1%) of the children are handicapped because of this condition. However, we now know how to stop this one kind of mental deficiency. Let us apply our knowledge and save every infant with this condition for a normal life. Let us begin the prevention of mental deficiency by early testing of every infant for phenylketonuria. The cost and effort of finding a case is negligible in comparison to the saving of even one child from the results of this dread disease.

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FROM SORE THROAT TO RHEUMATIC HEART DISEASE

● The physician's and bacteriologist's part in the recognition of rheumatic heart disease is described. The physician may use the public health laboratory to assist in quick diagnosis.

Irene V. Mazeika, M.D.*

The human throat is a "golden gate" of entrance to innumerable and invisible invaders: bacteria, viruses, fungi, ova or larval forms of intestinal parasites and cystic forms of intestinal protozoa. They may differ greatly in their kind, size and pathogenicity. Many of them by-pass the throat and in ways typical to each one of them, seek the organs of their choice. Others stay in the throat and form its normal or pathogenic flora.

A throat flora may be considered normal when the primary culture on the blood-agar plate shows a predominance of alpha (greening) Streptococci or nonpathogenic Neisseria (Gram-negative diplococci); while others like staphilococci, pneumococci, Hemophilus (influenzae or hemolyticus), diphtheroids, gamma (no change on blood-agar- Streptococci or hemolytic Streptococci other than group A, do not appear in significant numbers. A rather unusual finding in the throat culture are coliform bacilli, which may predominate after penicillin treatment.

On the other hand, the primary throat culture showing growth of beta hemolytic Streptococci (complete hemolysis of the red blood cells of the medium) or the predominance of microorganisms other than alpha Streptococci or nonpathogenic Neisseria, should be carefully subcultured, "fishing" suspicious colonies and inoculating them on the new blood-agar plate.

Other Important Micro-organisms

Besides beta hemolytic Streptococci there are several etiologically important microorganisms which may be found in a sore throat. They are: Corynebacterium diphtheriae (in carriers the cultures are not always successful, so several consecutive cultures should be made), spirochetes and Fusobacterium of Vincent's angina, pneumococci (especially in children who swallow their sputum), meningococci which have to be checked in a naso-pharyngeal culture too, and Hemophilus (Bordetella) pertussis. The identity of all these bacteria have to be definitely proven and immediately reported.

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The beta hemolytic Streptococcus, which is one of the most important representatives of the pathogenic throat flora, is causing many diseases of clinical character. They may be divided into two different groups:

1. *Suppurative diseases*: adenitis, arthritis, cellulitis, enteritis, empyema, erysipelas, impetigo, lymphangitis, meningitis, osteomyelitis, otitis, periostitis, peritonsillar abscess, peritonitis, pneumonia, puerperal sepsis and septic sore throat.
2. *Nonsuppurative diseases*: acute glomerulonephritis, scarlet fever and rheumatic fever.

A Disease Of The Young

Rheumatic fever, being a disease of young age, merits special attention. It is disastrous in its consequences, killing or crippling more children and young people than any other disease. Rheumatic fever is the first cause of death in the age group 10-15. In clinics about 93 per cent of all heart disease in patients under 20 years of age is of rheumatic origin.

In adults, the first attack of rheumatic fever is usually short and involves the joints rather than the heart; and if the heart is involved, the rheumatic process is seldom grave.

The observations of rheumatic patients and research done in the last 20 years have established that there are several predisposing factors to the disease.

Race does not play any part in the susceptibility to rheumatic fever, although Chinese seem to be slightly more resistant.

Sex plays no part either, although women appear to be slightly more susceptible.

Climate seems to be one the important factors. The temperate zone, especially its colder and humid regions, is certainly favoring rheumatic fever infection.

Resistance of the individual has some influence on the susceptibility; asthenics and children with constitutionally poorer mesenchymatous tissue are more prone to develop the disease.

Family incidence has, without any doubt, an important role. About half of the patients with rehumatic fever infection, rheumatic heart disease or chorea, have relatives with a history of similar ailments. The cause of this phenomenon is probably not only inherited susceptibility to the condition, but also contact with the members of the family, who have an acute or chronic streptococcal throat.

Definite Tie-ins

The social, economic and occupational status is of definite significance. Unsanitary and crowded quarters, cold, draft, humidity, poor clothing, undernourishment and fatigue seem to influence rheumatic fever infection. In the smaller, better provided private schools, the incidence of rheumatic fever is not significant, while in the large, crowded public schools, it is rather common. No wonder then, that in such surroundings as schools, hospitals, factories and armies (especially in the first year of service), the streptococcal sore throat infection may spread with alarming speed and be followed by an epidemic of rheumatic fever. The rheumatic process in adults is influenced significantly by occupation. People doing strenuous work in cold and humid weather or in drafty, hot or cold places, are attacked more easily, usually in the extremities.

Any sore throat in school-age children should be given the most serious attention. The medical service in the schools could well be supplied with sterile swabs and maintenance media for shipping them. The school medical authorities should be instructed to take material from each acute sore throat and send it immediately to the nearest bacteriology laboratory.

Usually young rheumatic fever patients have a history of several sore throats. The group A beta hemolytic Streptococcus, although firmly established in the throat of its victim, is not able to provoke a rheumatic fever attack at once. Its toxins, eliminated into the circulation gradually sensitize certain mesenchymatous tissues to the point of an acute allergic status.

Symptoms Of Rheumatic Fever

Rheumatic fever starts with several general symptoms like increased temperature, rather excessive sweating, loss of weight, pallor, anorexia, leukocytosis and increased blood sedimentation. The site and the intensity of the symptoms seem to be influenced by the virulence of the Streptococcus and the resistance of the patient. Swollen joints, usually the large ones and usually in pairs, are red, hot and tender but not infected.

The local symptoms of the acute rheumatic fever process in the heart are rather elusive. especially in the first stage of the illness. They are limited to precordial discomfort or nontypical, sometimes sharp, pains in the chest. There may be some changes in the rhythm of the heart such as: premature beats or paroxysmal tachycardia. More or less pronounced dyspnea results usually from acute pericarditis or acute cardiac dilatation. In mild cases like rheumatic sore throat, symptoms of cardiac involvement are seldom detected.

Rheumatic Heart Disease

Rheumatic heart disease starts as a diffuse, degenerative edema, which in the second week of the illness (or later), develops into a characteristic inflammatory process around the blood vessels and within their walls. It develops gradually into lesions typical of rheumatic sensitization such as granulomata. These granulomata, called Aschoff bodies, may also be found in the heart muscle (between its fibers) as well as in the endocardium, pericardium and nerve fibers. In the progress of the illness they may subside and finally disappear completely. However, in about 15% of chronic cases they tend to remain.

In rheumatic fever, the heart muscle is damaged not only by the typical rheumatic lesions, but also by malnutrition, caused by infiltration and degeneration of the walls of the coronary vessels. The rheumatic process of the myocardium may provoke heart dilatation, which in turn, may lead to heart failure and death. Heart failure in the chronic rheumatic heart may be caused by a recurrent attack of rheumatic fever. On the EKG, the earliest and only sign may be prolongation of the P-R interval, due to edema or Aschoff bodies pressing upon the conduction system. In serious cases there may be dropped beats, omission of the whole cycle and even heart block.

Rheumatic Endocarditis

In rheumatic endocarditis, the typical lesions in the form of tiny vegetations appear usually on the auricular surface of the mitral and tricuspid valve cusps or on the ventricular surface of the semilunar valve cusps. Their size may extend from a tiny, almost undetectable nodule to 2-3 mm. in size. They are formed mostly on the line of closure of the valve, exceptionally within the valve itself. Later when the primary edema subsides, the exfoliated epithelium is substituted by new connective tissue which finally develops into a scar. The scar may fuse the edges of the valves thus forming stenosis or it may shrink them, causing insufficiency. The highest percentage of rheumatic lesions are located on the mitral valve (62-80%). The tricuspid valve is seldom affected; and still less the semilunar valves.

Rheumatic Pericarditis

Rheumatic pericarditis, starting with edema and exfoliation of the epithelium, may cause an exudative process with the accumulation of the fluid in the pericardial sac. The resulting formation of adhesions between the visceral and parietal layers of the pericardium leads to adhesive pericarditis and to its frequent sequela, Pick's disease (pseudocirrhosis of the liver).

The first infection may be mild and does not necessarily result in a serious damage to the heart, but there always exists a danger of recurrent attacks. There may be several attacks, each one of them aggravating the status of the patient. However, in adult life, a recurrent attack is rare. Sometimes an irreparably damaged heart may succumb to the following: (1) auricular fibrillation which complicates about 70% of the cases of mitral stenosis and 20% of all cases of rehumatic heart disease; (2) congestive heart failure (myocardial insufficiency) which complicates about 70% of all cases of rheumatic fever; and (3) subacute bacterial endocarditis (infected by alpha, greening Streptococcus) which complicates 5-25% of all rheumatic heart disease. A recurrent attack may be brought on not only by a new infection with Streptococci or by any other bacteria, but also by some circumstance such as chilling, fatigue or injury.

Fortunate Cases Of Complete Recovery

Sometimes when the damage of the heart is not crippling and the patient has good medical guidance, he may enjoy a long and active life and finally die of some other disease. There are fortunate cases in which the rheumatic process subsides completely and the heart returns to normal.

Opinions about the therapy in the rheumatic fever infection are many and varied; but Dr. Paul D. White's belief is that "good nursing care" is of prime importance and is worth more than most drugs. The improvement of the patient's status after salicylate therapy is ascribed rather to the result of decreasing streptococcal throat flora than to restraint of rheumatic fever.

Local Therapy Important

Considering that it is *the throat* which is the site of the growth of group A beta hemolytic Streptococci and that the toxins of this Streptococcus cause the alergic rheumatic fever sensitization, it seems logical to apply also energetic local therapy in the form of gargles, swabbings and vaporizations. If the tonsils are infected they should be treated conservatively. The surgical removal of tonsils does not decrease the menace of a recurrent attack or the severity of a new rheumatic infection. It does not even change the status of allergic sensitization. It is important to eliminate streptococcal infection *in situ* and thus cut off the supply of bacterial toxins sensitizing the susceptible tissues. Numerous examples show that in spite of prolonged and intensive general treatment, group A beta hemolytic Streptococci are found repeatedly in the throats of convalescent children. In cases clinically suspected of being rheumatic fever, the throat culture should be made promptly and attention should be focused on the beta hemolytic Streptococcus. It is essential to prove that any hemolytic Streptococcus belongs to the serologic group A, because the etiologic relationship of group A and the clinical or subclinical form of rheumatic fever has been definitely established.

The Role Of The Bacteriological Laboratory

The responsibility for proving or disproving a diagnosis of rheumatic fever is finally taken over by the bacteriological laboratory. Your public health laboratory can furnish you information and containers for the submission of specimens for examination. Special culture methods and other tests are possible. The use of the new Fluorescent Antibody Technique for diagnosis should be used where possible. It is a quick procedure that gives a prompt and fairly reliable result. If group A hemolytic Streptococci can be identified within a few hours, we have open to us new horizons in the control of this treacherous disease.

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PUBLIC HEALTH

Modern practice of medical and social science today has resulted in aiding people to reach the expression of a universal ambition. Fundamentally, this ambition is the wish to live a longer, healthier, more fully effective life.

National awareness of the fact that people are living longer and demanding to continue their useful productive lives finds expression in almost every type of medico-social literature released during the past and present decade. It has become apparent that the older population and that portion of the population approaching older age, present a new complex of medico-social problems. In the light of this awareness, official and voluntary health and welfare agencies are investing and directing a large portion of their professional energies toward attempts to more effectively serve the needs of an aging population. Older adults and the voting power they represent constitute a formidable power to be reckoned with.

This age group can no longer be thought of as a minority group representing problems and demanding services which organized medicine and organized public health can afford to dismiss. A constructive, workable program, to meet the needs of older adults for preventive medical services, must be developed by organized medicine and organized public health. If this is not done, then others less qualified to do so, will accept this responsibility by default.

The purpose and philosophy of organized public health in this area would be essentially the same as in other preventive medical endeavors, namely, the evaluation of the older person's total situation and, based upon professional experience and judgement in this area, channel back to private medical resources the disposition of those problems amenable to private medical solution. As such, a preventive geriatric program would serve as comprehensive service for the purpose of fulfilling the objectives of public health and to expedite private medical care.

Organized medicine, too, is faced with an increasing dilemma. It can continue to invest its energies in a futile attempt to block provision of services which would exploit political potentials or lend its support to

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● Modern medicine and public health have succeeded in adding years to life. We are now challenged to accept the responsibility of adding breadth and depth to these added years.

EVENTIVE GERIATRICS

Edward F. Gliwa, M.D.*
Mark Kenyon, Ph.D.**

agencies which have traditionally functioned and will continue to function to expedite the private practice of preventive medicine.

The dynamics of the present situation do not appear to be diminishing. It is increasing by virtue of subtle and, at times, direct pressure to institute legislation which would serve to the detriment of the older adult, organized medicine and organized public health programming.

Program Outlined For Delaware

Workable, practical systems whereby the needs of older people may be determined and reasonably served must be developed by official health agencies as both a community service and as an aid to expedite the private practice of preventive medicine. This paper presents a possible program outline to deal with the medico-social needs of Delaware's aging population. It is not intended to blueprint a final approach to so complex a field. The authors hope only to present a practical outline, or guide, which could serve as a justifiable beginning.

The basic aim of this program would be to develop a central study service or evaluation center or clearing house primarily for people who are over the age of 60 and who require aid in meeting their medico-social problems and other problems arising from them. It would be a unified attempt to provide a complete evaluation of a person's needs in one place rather than a piecemeal multiple stop type of service. The service would be staffed by a team composed of a director of adult counseling services. In addition, medical and social service personnel would be needed to make an initial appraisal of the needs of patients and determine their amiability to medical guidance, treatment, and to the social services currently available in the community. Accumulating evidence tends to show that older people do not make full use of the health and social services available to them. An important emphasis in this type program would be to devise ways of overcoming resistance and reluctance to utilize available services. The physical presence and potential availability of physicians and hospitals in a community does not insure that they will be adequately used.

Servicing the ambulatory older person living in the community is a compartively new field. Nevertheless, adequate justification of such proposed programming resides in the fact that it is expandable and flexible. The investment in physical plant, time, and finances would not be excessive. There are many ways to justify a program of health maintenance or preventive medicine. The underlying principles and the proven good judgement of any preventive medical and public health program apply with equal import here. The moral justification ante dates the medical and public health professions. Evidence can be found in scriptures, "You shall rise up before the hoary head, and honor the face of an old man" (Lev. 19:32); "With the aged there is wisdom and in length of days there is understanding" (Job 12:12). Those of us preferring a more materialistic justification cannot argue against the known fact that an ounce of prevention against social, financial, and physical deterioration is worth more than a pound of cure.

Modern Society Often Responsible For Problems Of Older People

Modern American society in many ways contributes to the problems of older people. Certainly no single program can be expected to counteract all negative influences. The heavy emphasis placed upon gainful employment, being youthful and attractive, being independent, etc., often leaves the older person quite handicapped, even though he may have heretofore led a productive and well adjusted life. One basic aim would be to help the older person utilize his own personal, and the community's resources, to counteract tendencies toward debilitation and, in some cases, gross deterioration.

A preventive service such as is discussed cannot be a "fountain of youth" but rather may have to be satisfied with less spectacular gains. Each older individual's progress would be measured as a function of change, from their own base line as well as actual prevention or amelioration of debilitating disorders. The population which the service would attempt to reach would be persons over the age of 60. The only provision would be that they be sufficiently ambulatory to be seen at the centers set up within existing county health units. Transportation, utilizing other community resources, could be enlisted to bring persons to the service.

The question arises as to whether aged persons would avail themselves of such service. This problem was explored in the cross-sectional survey conducted at the Kips-Bay Health Center in New York City. Respondents were asked: "If this neighborhood had a medical center especially for older people, would you go there for advice on your health problems?" Sixty-two percent replied that they would, 31 percent that they would not, and 7 percent did not know. Of every 10 respondents in each economic group, 2 in the high group, 6 in the medium group, and 7 in the low-income group would use the service. This center serves approximately 160.000 persons. The results of an analysis of 250 cases indicate that, especially with the lower income group, a definite need is felt for help specifically directed toward older people in a wide range of problems. It is anticipated that considerable numbers of patients would be self-referred.

Interaction Between Health Services And Other Community Agencies

One objective of this service for the aging would be to channelize individuals to resources in the community where they could receive ameliorative help with specific non-medical problems. Rather than develop an extensive program which might duplicate existing facilities, the program would provide further information about the adaptability of certain kinds of services, as now constituted, in helping the aging.

The proposed service should attract considerable numbers of aging persons. Provision would be made to avoid the possibility of "flooding" referred agencies. The goal of the proposed service would be to screen and refer older persons for service in accordance with the extent and variety of facilities that are found in community agencies and to determine the extent to which such referrals are successfully employed.

**"The physician in private practice may not have time to concern himself directly with all the many problems arising from problems associated with aging, but he should, as a good citizen lend his support to the marshalling of forces which can deal with them. For example, none knows better than he the importance of maintaining the previous environment of the aging person, leaving about him those things to which he is accustomed; those tools of living which he has already learned to use; those relatives, friends and acquaintances whom he has known most of his life. These elementary principles of geriatric medicine are matters of prime importance in the application of our social security laws; essential to the success of communal housing projects; necessary for the individual's development and maintenance of satisfying and productive interests and activities. Many disciplines are needed to effect the solution of these problems."*

Referrals To Other Agencies

It is important to specify that any service so planned would make the decision to refer a patient to an outside agency or clinic only if such intensive work seems indicated by analysis of the patient's problem and situation. Wherever such analysis indicates that the individual is likely to benefit from services available in other agencies, referral to such agencies would be made. Referrals to community social and health agencies would be geared to the intake policies and service facilities of each agency. Acceptance of referrals from other agencies will be limited by the optimal intake load and the facilities offered by the service.

Essentially, a "preventive geriatric" service would provide a short-term relationship with the older person but will also entail follow-up contact with agencies to whom they might be referred. The type of services that would be provided would be: Information and health education, socio-medical workup and evaluation, referral to appropriate community resources, financial, employment, family agencies, recreation and utilization of leisure time, living arrangements and housing.

To live long, and age happily is a fundamental human desire. A long life need not be accompanied by physical disease and social maladjustment. Senescence and senility are not synonymous. Aging and chronic illness are often synonymous in the minds of most people. Aging is a process not a disease and it is not necessarily accompanied by any specific disorder.

Positive Guidance

A good portion of the potential to live a long and useful life depends upon positive guidance which enables older people to live in reasonable security and satisfaction. As such the characteristics of the aging process deal with those phenomena which are as peculiar to it as teething is at an earlier epoch of life. Aging differs from earlier periods of life only in the degree to which it represents economic, social, educational, financial, as well as health and medical problems, and the necessary adjustments in each of these areas.

In view of the fact that older adults constitute an increasing segment of our population, and that this segment will continue to increase, it is necessary to give serious consideration to developing a more positive philosophy as to the role of the aging in the total society.

New Concept Of Aging

The concept of aging gradually being outgrown is based upon a general assumption of organic and bio-social deterioration starting during middle life, and progressing until it finally becomes irreversibly incapacitating. The result of such misinformation has been to expect little or nothing. The roots of the present philosophy can be traced by examining the economic and industrial history of the nation.

As a consequence of the overemphasis upon youth, the first adaptation to aging was to set older people apart from the rest of society. They were considered as a group no longer useful, having made what contribution they could, and as such entitled to withdraw to enjoy the "leisure" of their remaining years. In many activities, older persons have been encouraged to give way to youth. This point of view has often been idiomatically expressed in the phrase, "youth must be served." A more positive contention would be, both youth and the aged must be served.

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*"Care of the Aged"—Thomas Hodge McGavack, World Wide Abstracts—June 1960, Vol. 3, No. 6.

The organic and social characteristics of aging are usually gradual; they do not cause sudden inability to deal effectively with life situations. It follows that a concept of aging, based upon gradual decline in faculties will slowly be assimilated. Attainment of middle age should be viewed as the threshold of a new epoch of life; an epoch that can represent a new stage of adjustment, maturity, and social contribution. The older adult who is free from the immediate responsibilities of early adulthood, can make new contributions to the general welfare. Experience gained as a result of having lived a half-century or more would tend to make the contribution of older persons to the social welfare more effective. This is the role older persons would choose for themselves.

Science Of Gerontology

The science of Gerontology is concerned with the investigation of the many physiological, psychological, and environmental factors which affect and influence the aging process. It is also concerned with investigation of methods and techniques which tend to maintain and improve the health and well being of the older adult. It utilizes health education, and educational methodology as a positive approach toward these desirable goals. Gerontologists and other health and welfare specialists have considerable information which if properly applied, would markedly improve the health, economic status, and general welfare of older adults.

The fundamental principle of public health endeavors is prevention of disease and debilitation. The application of this underlying principle has paralleled the emphasis placed upon youth in our culture. Prevention of communicable disease is a foundation of public health. This is exemplified by the development and application of sanitary science, environmental health programming, and the control of food and water-borne disease. Public health, together with other branches of medicine, stands on the threshold of the new challenge resulting from its past successes. This new challenge is one of chronic disease and the problems arising therefrom. Public health has also been consistently concerned with the maintainence and potential improvement of the individual's health. One can parallel all these past and present philosophies by tangible public health services. The well child conference is an example of utilizing modern technique for maintaining and promoting the health of the child. This is done by utilizing the team approach of medicine, nursing, nutrition counseling and health education. A similar parallel is presently lacking for the older adult.

Health Education Programs

The objectives of health educational programs are two fold; the first being improvement of the educational process applied to aging persons, and secondly; the application of accurate information and procedures to improve and maintain both personal and community health. Health education endeavors to develop a sense of responsibility and provide the indispensable motivation for the preservation and improvement of personal and community health.

An effective health educational process must possess meaningful information and sufficient motivation. Such motivation to develop desirable attitudes leading to constructive action on the part of the individual are effectively accomplished within the physician-patient relationship. This relationship would be utilized in the evaluation center.

A second consideration of equal importance regards the position of respect and status represented by the medical profession and its practicing members. Guidance and counseling which result from the health appraisal is held in high regard by the patient. The word "doctor" itself is derived from the Latin, doceo, meaning to teach.

The steady increase in demand for medical care is a tribute to the effectiveness of community health education techniques and the quality of present day medical practice. The possibilities for including health education as part of medical service and general community education to prepare for later maturity and aging is unlimited. It must begin long before "retirement age." Therefore, geriatric service has three distinct objectives: first, the postponement of senility; secondly, treatment when necessary; and third, lifelong coaching, guidance and counseling.

Early Education Urged

The sooner health education for aging is applied, the greater the benefits to the individual. The values derived from early education for aging are infinitely greater when applied at age 40 than at age 60.

The focus and philosophy of a service for the aging reflects the gradual change in emphasis which characterized health and welfare services at the turn of the century. Service and programs were developed to do things "to people." Later on emphasis changed to doing things "for" people. At present, maximum effort is devoted to doing things "with" people while the two previous points of view are utilized depending upon individual situations.

Increased medical skills and newer therapies have succeeded in prolonging human life to the extent where problems previously non-existant became acute. The rapidly expanding and progressive advancement of medical science have paralleled similar advancement within the social sciences. Older persons are at last being considered as individuals living in family constellations wherein social and interpersonal dynamics are in continuous operation.

The inter-relationships between individuals, families, and communities should serve as criteria upon which programs and services are evolved. Previously, persons were thought of as exponents of some organic entity unrelated to the physical, cultural, and emotional environment. The obvious inadequacy of this point of view, resulted in evolution of a new philosophy which conceives of the individual as a product of a bio-social past, interacting with the physical, social, and emotional environment of the present. This newer concept of man is still in process of evolution.

Modern medicine has successfully controlled, treated, and prevented many of the major causes of death and debilitation. This progress has changed the focus of the problems associated with aging from one which previously had been medical with social implications, to one of major socio-economic importance with medical implications.

Assessment Centers Called For

The 1951 Governor's Conference on the Problems of the Aged in the State of California called for the establishment of "assessment centers" on a local level as a desirable and critically needed part of the medical care organization for an aging population.

**"The centers could be located at existing in-patient or out-patient departments of hospitals, at private medical clinics, at health departments, or within industrial medical services. These assessment centers would be primarily advisory, and would provide facilities for counseling, diagnosis, and social service, and by reference to specialists and treatment facilities would aim to establish the maximum rehabilitation of the individual."*

The 1960 Governor's Conference on Aging in Delaware also cited this need.

Another overall objective of a service program for the aging is preparation for normal healthy aging, and the control of chronic illness. This would follow a pattern of local administration and implimentation of needed health and welfare services. Chronic disease control programs in public health have long been justified. Mr. Oscar Ewing proposed that:

1. The basic approach to the conquest of chronic disease must be prevention.

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*Governors Conference on the Problems of the Aged, Sacremento, California, 1951, p. 152.

2. The emphasis for victims of these diseases must be on arresting the progress of the ailment and on helping the individual to maintain normal living.
3. The emphasis for the medical and public health professions, business, industry, and the general public must be on the capacities and abilities of the victims of chronic diseases, rather than upon their limitations.

Emphasis May Swing To Age

Emphasis upon youth which so characterized our nation in the past, will in time be properly apportioned to include and appropriately value the human resources of our older adults. Human life has been extended. It has been given additional length. We are now challenged to give it breadth and depth.

States should encourage and support establishing all-purpose facilities for counseling, for early detection and follow-up of diseases and disability, and for promotion of public health education in nutrition, and mental health.

Many persons are being restored to productive lives through rehabilitation programs in geriatric centers associated with general and mental hospitals. These centers are staffed by general practitioners, psychiatrists, social workers, nurses and other persons experienced in working with the aging. Another aim in this field is prevention of mental disease and the maintenance of mental health.

Prevention calls for a comprehensive program which emphasizes and makes available community mental health services and education when they are needed.

State Agencies Available

State agencies that could be made ready for service include the State Department of Public Welfare, the Rehabilitation Division of the State Board of Education and the State Board of Health. The best way America's 16 million senior citizens can be helped adequately is in the family, if possible, and in the community. The best assistance we can give is to help the aged help themselves.

The central problem of the aged group is not any one specific concern such as health, employment, or finances, but rather that of maintaining or rediscovering a meaningful and significant role in life, either within the family or in the community. Predisposition to use community resources will vary with age, socio-economic status, ethnic group, and health. The first step should be to provide the help needed now.

Summary

The major functions of the proposed service would be:

1. To serve as a screening center for older adults who need help in some area and do not have knowledge of existing resources.

2. To serve as a study and evaluation center to give definitive advice to older adults or the agency referring the person to the center, regarding possible disposition.

3. To provide a direct service whose function will be to counsel older persons toward the possible solution of their health and other problems and those circumstances which prevent their adequate adjustment.

4. To help maintain the optimum physical and mental health possible and prevent unnecessary breakdown.

5. To help older persons to attain and experience the satisfaction of three basic needs, namely: Something to do. Someone to care. Some place to live in dignity, health and independence as long as possible.

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DISCIPLINE

AS A PHILOSOPHY OF LIVING

● **Discipline is a method of influencing behavior. A child is taught not only what he has to do, but also what he is prohibited from doing.**

Fred A. Stonesifer, Ph.D*

One of the most pressing concerns of mothers with young children is exemplified in the following query: "What shall I do when Johnny—?" This question might be directed to members of the bridge club, the neighbor across the back fence, the man at the store, or some professional adviser. While there is always the possibility that the mother is making conversation, the professional consultant would do well to regard such requests seriously, at least until further information reveals the extent of the mother's concern. An offhand or superficial reply may later reveal to the consultant that he has put himself in a difficult position, especially if the mother returns and says, "I tried what you said, but it didn't work. What do I do now?"

The Meaning Of The Word

The problem of discipline is one which all parents have to face. The difficulty of dealing with such a problem is complicated by the variety of meanings which the word discipline presents. A casual reference to an ordinary dictionary will reveal a dozen or more meanings of the word. Some of the concepts in the definition are the following: training, subjection, instruction, exercise, habit of obedience, punishment, correction, chastisement, a system of rules, a method of practice, studies in a course of learning, self-scourging. In further defining some of these words, we come upon such references as: to chasten, to subdue, to moderate, to restrain, to penalize, to requite, to educate, to develop the natural power and shape character by, to impart knowledge to, to give instruction to, to teach, to train by practice, to learn, to ascertain, to acquire skill, to make obedient to. From this partial list of meanings and concepts, it is easy to point out the difficulty of undertanding exactly what is meant by the person who seeks help because she has a problem of discipline.

For purposes of this paper, discipline will be considered as a systematic method of influencing behavior. Such a definition would include not only those instances where the parent is dissatisfied with the youngster's behavior in certain situations, but would also include those positive aspects of the child's development which are agreeable to the parent and include a compliance with social rules and customs. A more formal statement which seems to imply the same meaning is that of Ausubel,[1] which "refers to the imposition of standards and controls by others on the child's behavior." He goes on to explain his point of view under the term democratic discipline. This preferred method is contrasted with the laissez-faire method of under-domination of the child and the authoritarianism of over-domination.

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Discipline Works Both Ways

In considering the problem of the child's behavior, it must be kept in mind that this whole matter is not a one-way process. It might appear to be so because the parent always brings the child's behavior to the attention of the consultant. The process is never reversed. Yet the parent is the one who is teaching the child constantly how he is to behave and also is the model for the concepts being presented. It would appear then that if there are any concerns about the child's behavior, the parent as well as the child should be studied in relation to the total situation. Allowing for an appropriate period of training and learning, the reasonably healthy child can be expected to behave the way the parent has taught him.

The point of view of this writer is that all behavior is learned behavior. It is an adaptation of the individual to his needs and to his environment. His adjustment to his life may be agreeable or not, both to himself and to others. Whether or not satisfactions finally are developed and produced, depends upon how the individual learns to adjust himself to the needs and pressures that surround him. The role of the parent, the family, and society is to help the individual achieve the kind of adaptation and adjustment to the life he must lead so that he can develop into a competent, efficient, happy, and productive, mature member of society.

If behavior is a matter of learning, then it is also modifiable. When the parent is so concerned about the child's behavior that help outside the family is sought, the supposition is that either the parent's methods of dealing with the child should be changed or improved, or else some change must be brought about in the child himself. The probability is high that changes in both parent and child are necessary. Interacting forces and relationships are involved here so that the change in one instance results in a change in the other part of the common problem. This is not a matter of doing something to the child or to the parent, but rather an awareness of how a particular problem is being handled, of clarifying the parent's goals, and of helping to develop insight into methods of achieving the desired effects.

A Guide To The Positive Approach To Living

The ways to help a parent achieve the goals towards which she directs the child might seem difficult and indeed are at times. On the other hand, all acts of living might be considered as part of the disciplinary process to which everyone is subject. One's own point of view is involved here. The values and satisfactions that each one develops have a great deal to do with how the strain of ordinary daily life is met. A healthy and positive approach to daily living is not over-simplified in a statement which defines discipline as "directing a child's activities and behavior so that he can enjoy and be enjoyed by, the people around him."[2] As the child matures and develops, the mutual satisfactions of the child and of the people around him, presume that gradually he will be able to take over more and more responsibility for his participation in and management of daily living. The parent will provide an opportunity for practice in making decisions, forming judgments, and establishing self-control on the part of the child until at adulthood he has the capacity for complete responsibility of his own affairs.[3]

The view presented in this paper seems to be a broad one, and to encompass the whole of life's problems. This is admitted. However it is also suggested that many of the most perplexing circumstances with which individuals deal are often of relative minor importance when viewed as discrete events. Yet as these minor irritations accumulate, the total effect is frequently overwhelming and out of proportion to the particular circumstance. The value of a balanced and stable over-all view of events and situations is evident. Thus it is that the need for a basic point of view, a goal, a philosophy of living, is of primary importance. If the parent has a way of life which is reasonable and provides satisfcation, she will be able to deal with the relatively minor incidents and concerns of daily activity much more effectively, not only as regards her child, but herself also. She will know when she needs information, advice, guidance, counseling, and will seek it, and having sought it, hopefully will use it. To the extent the parent is able to do this, she will help her child to understand what is expected of him and how they may both reach the point of a competent, satisfactory adjustment to the kind of life available to them. Such a mother does not deal with the problems of her child from the standpoint of what is good or what is bad, but rather how and what is the child learning. She does not go about her day's work concerned with the problem of discipline, but rather is interested in and concerned with "the splendid process of learning how to live."[4]

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TUBERCULOUS EPIDURAL GRANULOMA OF THE SPINE SIMULATING NEOPLASM

● **Tuberculous granuloma of the extradural space of the spine, when not associated with tuberculosis elsewhere, can easily be confused with malignant disease. The differential diagnosis, therefore, is of paramount importance.**

Report of Two Cases*

Ralph M. Myerson, M.D.**

Tuberculous granuloma of the extradural space of the spine is generally a sequel of tuberculosis of the spine or of direct extension from a mediastinal or paravertebral tuberculous process. Occasionally there may be no evidence of tuberculosis in the vertebrae or elsewhere in the body. Two such cases associated with a rapidly developing paralegia,, have been seen in this institution. In both instances the clinical, roentgenological and operative findings could not be distinguished from a neoplastic process. One patient had evidence of minimal tuberculous involvement of the spine but neither had evidence of tuberculosis elsewhere in the body.

Report of Cases

Case No. 1

A 27 year old Negro was admitted to the Veterans Administration Hospital, Philadelphia, Pa., on January 21, 1954, with a chief complaint of weakness of the legs. Easy fatigue and mild lumbar pain had begun six months before admission and there had been a progressive weight loss of 20 pounds during this time. One week before entry to the hospital, weakness and progressive ascending numbness of the legs and difficulty in voiding developed.

The past and family histories were negative. Positive physical findings on admission consisted of moderate tenderness to percussion over the fifth to eighth thoracic vertebrae. A spastic paraplegia and loss of all sensory modalities to the level of T7 were present.

Routine hematological studies, blood chemistry and roentgenograms of the chest were within normal limits. A lumbar puncture yielded clear colorless spinal fluid with an initial pressure of 250 mm. of water. No cells were present and spinal fluid chemistries were normal except for a protein of 436 mgm. per 100 ml. The serological test for syphilis was negative and the colloidal gold curve was 0001210000. Roentgenograms of the spine revealed a radiolucent defect in the body of T8 and some loss of stature of this vertebrae (Figure 1).

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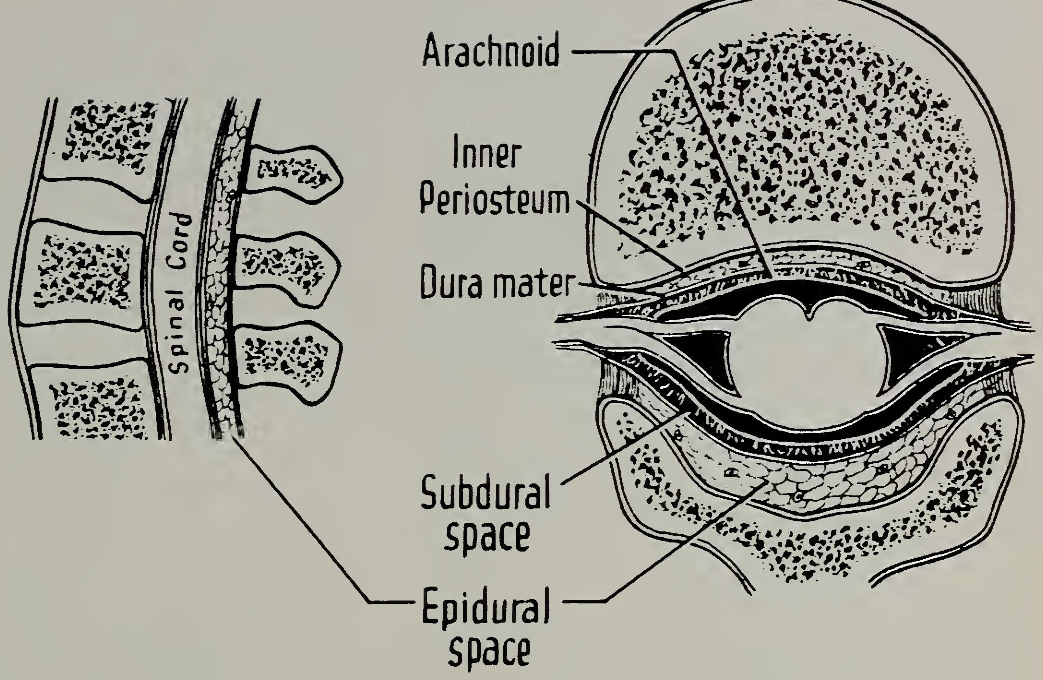

FIGURE 5*

Anatomy of the Epidural Space. The spinal epidural space is bounded by the dura surrounding the cord and by the periosteum of the vertebral canal. It extends from the first cervical to the second sacral segment. An actual space exists posterior to the cord, whereas anteriorly it is only a potential one.

The patient was seen by a neurosurgical consultant and laminectomy was performed from the seventh through the eleventh thoracic vertebrae.

The epidural space in this region was occupied by dense, grayish-white tissue which appeared neoplastic grossly. Removal of all of the abnormal tissue was not feasible. Biopsies were taken and the dural sac was decompressed the entire length of the lesion.

Histologically, a granulomatous type process with giant cell formation was noted (Figure 3). Special stains of the tissue revealed acid fast bacilli and subsequent cultures taken at the time of surgery were positive for M. tuberculosis. Spinal fluid cultures subsequently were reported as negative.

The patient was treated with streptomycin and isonicotinic acid hydrazide and, following his immedate postoperative period, with physical medicine and rehabilitation. Improvement was slow but steady and at the present time the patient has few residuals of his disease.

Case No. 2

A 33 year old Negro was admitted to the Veterans Administration Hospital, Philadelphia, Pa., on May 18, 1958, with a history of weakness and numbness of both lower extremities associated with chills and fever of two weeks duration. There had been a weight loss of 30 pounds in the previous five months. The past and family histories were negative.

Examination on admission revealed a spastic paraplegia with a sensory level corresponding to T6. The remainder of the physical examination was within normal limits. Routine laboratory studies and roentgenograms of the spine and chest were within normal limits. A myelogram revealed a complete block to the dye at the level of T6 (Figure 2). Examination of the

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*This illustration is reproduced by permission of the authors (Ref. 3) and the American Journal of Roentgenology, published by Charles C. Thomas, Springfield, Ill., for the American Roentgen Ray Society.

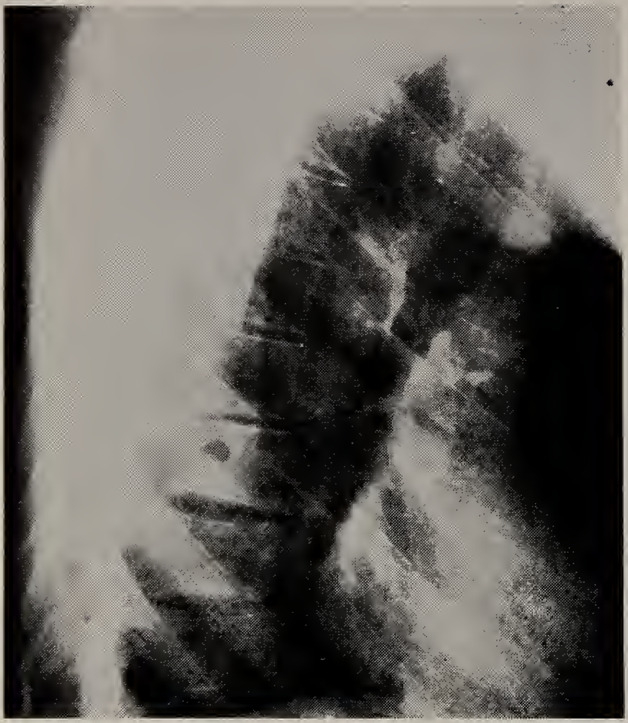

FIGURE 1

Roentgenogram of spine revealing lytic lesion of T8 associated with loss of vertebral stature.

spinal fluid revealed a protein of 300 mgm. per 100 ml., but was otherwise negative. An emergency laminectomy was performed from T1 to T8. The entire epidural space in this area was occupied by dense, grayish-white tissue grossly resembling tumor. As much of the tissue as possible was removed. There was no apparent vertebral involvement. The pathological report was tuberculous granuloma (Figure 4). Special stains of the tissue were positive for acid fast bacilli and cultures ultimately were positive for M. tuberculosis. Treatment with streptomycin, insonicotinic acid hydrazide and physical therapy has resulted in apparent complete recovery. No evidence of tuberculosis has been detected elsewhere in the body.

Discussion

The anatomic relationship of the epidural space are illustrated in Figure 5. The epidural space may be invaded by a variety of disease entities including acute infections, neoplasms and chronic proliferative processes, the so-called epidural "granulomas." The latter have been reported secondary to tuberculosis, chronic pyogenic infections, foreign bodies, syphilis, fungus and parasitic infestations and sarcoidosis.[1-4] Any of these lesions may give rise to neurological complications.

The acuity of onset, toxic symptoms, history of precedent trauma or infection, and the presence of more definitive localizing signs such as heat and tenderness usually aid in the diagnosis of an acute epidural abscess. There are, however, usually no clear-cut clinical, roentgenological or cerebrospinal fluid findings that help differentiate the compressive symptoms of the various granulomatous lesions and neoplasms. The presence of an obvious process elsewhere in the body will of course tend to focus attention on a similar epidural lesion. An exact diagnosis, however, usually depends upon surgical exploration and microscopic

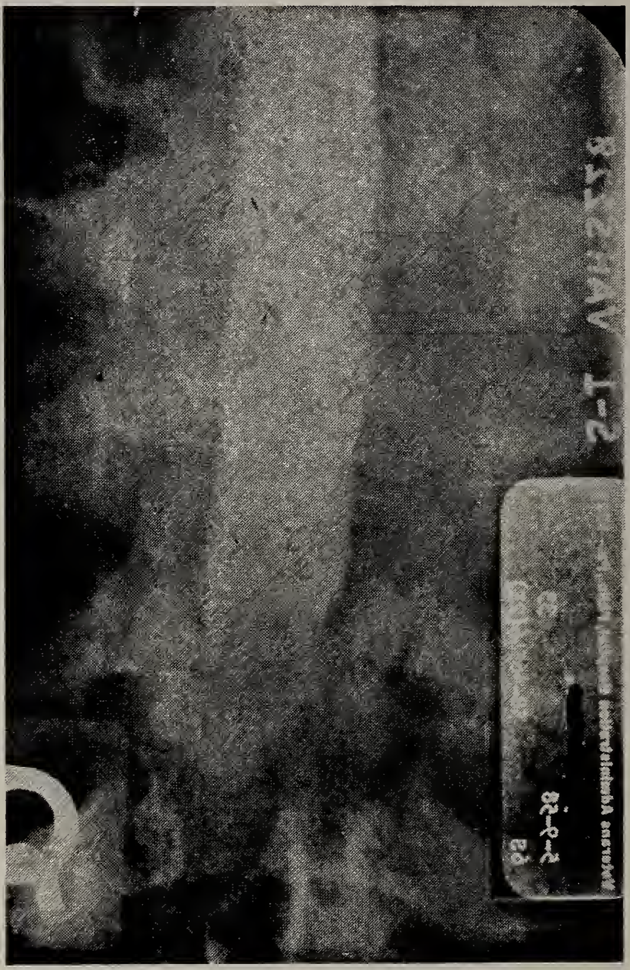

FIGURE 2

Myelogram of case No. 2 revealing complete block at level T6.

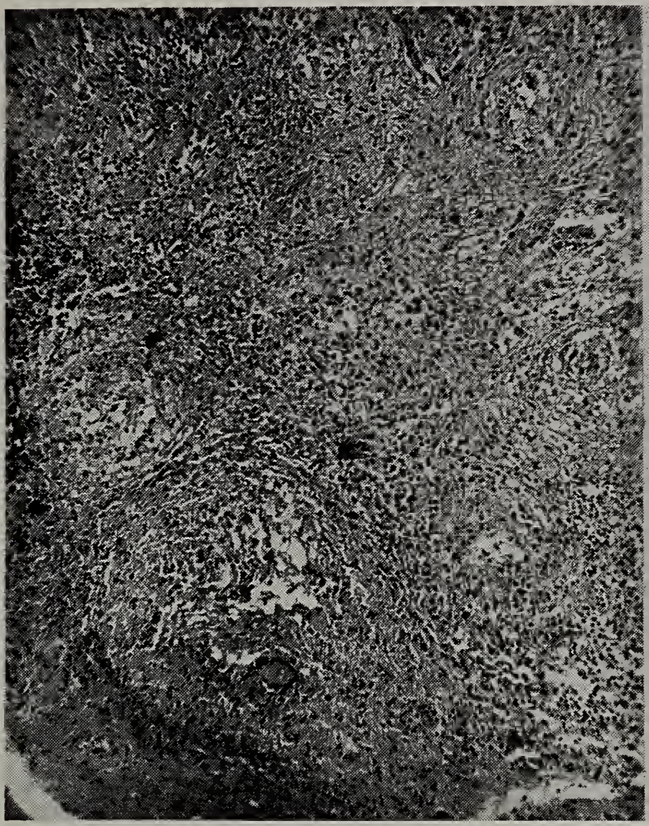

FIGURE 3
Photomicrograph of Epidural lesion, (X90), Case No. 1, showing caseataing granuloma and giant cell formation.

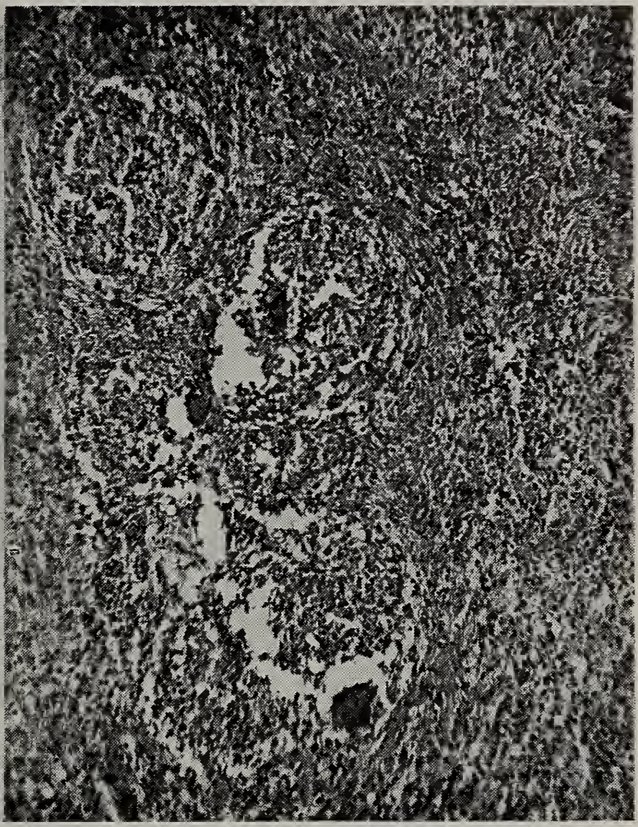

FIGURE 4
Photomicrograph of Epidural lesion, (X90), Case No. 2, showing caseating granuloma and giant cell formation.

and special examinations of the tissue removed. Gross examination may be misleading as in the two cases presented. The granulomas themselves offer differential diagnostic problems even when examined microscopically; even with the use of special staining and cultural techniques no definite diagnosis may be established.

Shenkin and his coworkers analyzed a series of 54 extradural compressive lesions and reported that metastic malignancy was responsible for about fifty per cent. Twenty-five per cent were due to infections, 15 per cent to primary epidural tumors and the remainder were related to congenital cysts, lymphomas and post-traumatic conditions.[5]

Tuberculosis is the most common infectious process producing epidural granuloma. As mentioned previously, the vast majority of these cases occur as extension from Pott's disease of the spine.[6] Primary tuberculoma of the spine is rare. Wilson and his associates found 80 cases of tuberculoma of the central nervous system in approximately 6000 autopsies performed at the Philadelphia General Hospital between 1925 and 1940.[7] There were only 8 cases in which the only tuberculous focus discovered at autopsy was the central nervous system and in only two instances was the process confined to the spinal cord.

The difficulty in establishing a definitive diagnosis and the urgent need for spinal decompression re-emphasize the need for surgery both for diagnostic and therapeutic purposes.

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THE PUBLIC HEALTH NURSE AND THE RETARDED CHILD

● The public health nurse plays her part in the over-all picture of care for the retarded child.

Eleanor K. Belfint, R.N.*
Louise W. Sylvester, R.N.**

The public health nurse has traditionally functioned as a teacher in matters of health. In recent years this area of teaching has been extended to recognition of problems or deviations from normal growth and developmental problems. The public health nurse is often one of the first professional individuals to notice the deviation of a preschool child in terms of normal growth and development. Home visiting provides an excellent opportunity for the public health nurse to observe children who may not be functioning at a normal level. The difference may be reported to the public health nurse by the parent or the parent may suspect a difference and talk about it to the nurse.

Among the terms used to describe deviations from a recognized norm, have been *exceptional*, *mental defective*, and *mentally deficient*. Today the term that usually is used to describe such conditions is mental retardation. This implies a mental defect and a social inadequacy based upon the inability of the individual to functon satisfactorily in his surroundings.

As a case finder the public health nurse is interested in the early detection of the problems of the mentally retarded child. She can help these parents to understand that these children have problems similar to those of a normal child. Their physical and emotional wants are the same as those of any child although their rate of growth and development is slower. To this relatively new field the public health nurse, through here training and knowledge of growth and development of normal children, is prepared to understand the growth and development of the retarded child.

The public health nurse helps these parents of a mentally retarded child through her understanding, teaching, and counseling. Parents are sometimes told by their doctor as soon as the condition is evident; others are not told until they learn something is wrong. The first reaction of many parents, when told, is disbelief. This is a normal reaction. Some parents in trying to solve their problems become frustrated and confused. Not until the parents accept the child as a mental retardate can provisions be made to help them.

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In the home, the public health nurse establishes a good working relationship with the family and the child through a warm and friendly attitude. She listens well to the many problems, fears, and concerns that disturb them and because of her supportive and professional role, they gain confidence in her ability to help them.

The mother often needs reassurance and confidence in herself. She is helped to understand that each child is an individual and sets his own pace. He needs daily planning that fits best into his own family life. When simple tasks are demonstrated to the child and attempted repeatedly by the professional person, the parent understands that accomplishment comes only with patience, repetition, and when the child is ready. Understanding this, the parent tends not to blame herself for incompetence, and thus feeling less guilty and frustrated she is better able to help the child. She becomes alert to his readiness for the next step in achievement and independence and is therefore careful not to push him beyond his capabilities.

The pressures of every day living and the demands of other members of the family may limit the amount of time and attention that can be given to the retarded child. Each parent must determine where his time and effort can best be spent for the welfare of the whole family. Similarly, each parent must determine for himself and the child, a plan whereby the child can reach his maximum potential, whether it be at home or by using other community resources.

Delaware's Day Care Centers

In Delaware we have the Day Care Centers for the severely retarded, the Opportunity School for the trainable, and the Hospital for the Mentally Retarded at Stockley for those requiring institutional care. The educable mentally retarded child may profit little from regular school; but in special classes he may be able to learn some elementary or even higher academic and vocational skills. Parents are furnished with information regarding these facilities and urged to visit these places before making a final decision.

It is also stressed that the love and sense of belonging that goes with home and family life will benefit the child in early years in his adjustment to any future plan. Some children may profit from residential living away from home while others may benefit from care and schooling at home. No matter where the child is living he has a right to the love and interest of his family.

Clinical Appraisal Necessary

The only satisfactory detection of mental deficiency is based on a comprehensive clinical appraisal. This appraisal combines the evidence from a complete history. The presumptive cause of the condition in each case should be established. The history must take into account such things as sensory handicaps, motor disabilities, emotional disturbances, behavior disorders, and environmental deprivation. One must remember that the diagnosis of mental retardation, especially during the developmental period, is prognostic and therefore quite tentative.

CASE MATERIAL

The following cases illustrate some of the ways in which the public health nurse helps to teach and counsel families with mentally retarded children.*

The public health nurse may follow a retarded child or suspect from time of birth or at any time during his preschool years. In the case of Peter, who is a mongoloid, the public health nurse saw him when he was a few weeks old. He was referred to the services by the Crippled Children's Division because of other anomalies. Regular visits were made by the public health nurse to the home to help the mother with a severe feeding problem. Peter's mother, being an older woman and a careful housekeeper, found the tedious and time-consuming task of feeding him frustrating and nerve racking. She needed a great deal of support, encouragement, and information during the early months. The public health nurse provided this and was on hand to help her introduce each new food to the child. By actually feeding the child, a new technique was demonstrated, giving the parents the feeling that tangible aid was given. It also gave the parents an opportunity to relax and to express their own feelings of concern. This was necessary because while Peter's condition was explained to the family by the physician when the child was a few months old, like many parents, the diagnosis of retardation was not easy to accept and they did their share of shopping around in hopes of a more favorable one.

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*Case material supplied by Louise W. Sylvester, R. N.

In the meantime, the public health nurse continued in the home weekly helping the mother and child with each new step, teaching the child to hold a cracker, a cup, a spoon, and finally self-feeding. When Peter was ready for self-dressing, devices such as a large button and buttonhole on cloth and a toy lacing shoe were used. These proved helpful in increasing the child's skill as well as proving many happy hours of play.

Counseling Aids Parents

Peter is a lovable child; his parents and older brothers and sisters lavished love and affection upon him to the extent of spoiling him. It was obvious that the whole family needed help in the area of discipline which is essential if the child is to develop into a well-adjusted and fairly independent individual. The parents through counseling were helped in working out a consistent method of disciplining him.

By the time Peter was four years old, the parents' chief concern was that he did not speak. They had consistently rejected any suggestions of a psychological examination being done but were enthusiastic about a speech evaluation. Arrangements were made with the speech therapist to see the child and she explained to the family that a psychological examination was essential in order to determine what could be expected of the child. The parents were now ready to accept this procedure and tests were done. By this time they were willing also to accept the diagnosis of severe retardation and were determined to care for him in the home. This was encouraged and in order to help them more, the speech therapist on occasion would accompany the public health nurse on her visits to teach ways and means of stimulating the child's speech.

Peter eventually became an overactive and fearless child, requiring his mother's full-time attention to keep him from danger. As he was eligible for the Day Care Center Program, the public health nurse encouraged the mother to consider the possibilities of daytime care to relieve her of the constant supervision and to give her more time to devote to her family and outside activities. It was also pointed out that the child would derive benefit from socialization, organized play, training in daily living, and discipline. The parents were given literature, and other information and were invited to visit a Day Care Center. They were, however, not pushed into making a decision.

One day the mother called stating that they had decided to enroll Peter in the Day Care Program. She asked that the public health nurse make the necessary referral. This was done and within a few weeks Peter was accepted. Now he is called for each morning and returned to his home the same afternoon in a bus under the supervision of a trained attendant. Peter is happy about his ride, his school, and his new playmates. His parents and siblings are enthusiastic about this arrangement, too.

A Good Working Relationship

Both mother and father are active in the Parent Group and are interested in learning more about their child's condition and in making life better and happier for all such children. They realize that their child will always need some type of supervision and are making plans for his future. The public health nurse will continue her work and interest in the child and his family and offer help, encouragement, and support whenever it is needed and desired.

Since each child is an individual and each family a unit, no one special program or plan can be expected to meet the needs or provide a satisfactory solution for all mentally retarded children and their parents. What worked well for Peter and his family would not have been feasible in the case of little Tommy and his parents. We came to know this child and his family through a routine home visit to a newborn child. In the beginning there seemed little that the nurse could do or little that the family needed. Tommy's parents were young and intelligent. They had established a comfortable and happy home and their four other children were well adjusted.

Programs Geared To Each Case

From the beginning, Tommy had persistent vomiting and was under the care of a pediatrician. With the doctor's permission the public health nurse continued to make occasional visits into the home often enough to keep abreast of any new developments. As Tommy's parents had had experience with four normal children, they knew that this child was not progressing as he should. Now they began their endless search from one doctor to another, from one hospital to the next, always hoping for a cure or improvement in the child's ondition, always disbelieving that this ould have happened to them.

Tommy at twelve months of age was a mall pale child content just to lie in his crib. He made no effort to hold his own bottle and was having frequent seizures. His mother never left his side and gave him around the clock care. The strain was taking its toll on her physical health and the emotional and social health of the entire family. Family life began to disintegrate and there was marital discord. The mother talked to the public health nurse freely about what was happening to her once happy and well adjusted life. She talked about the frustrations and confusion resulting from seeking advice from so many different people and agencies, each with their own opinions and feelings. The public health nurse, being the one constant person to work with the family, was instrumental in bringing about a conference of the various members of the team presently involved. As a result of the team conference, which included the family physician, priest, pediatrician, psychologist, and social worker, pertinent information was obtained. Reports and recommendations were requested from other doctors and hospitals having previously seen the child. With this information it was more clearly understood what the mother had been told and what she had not been told. It was the pediatrician who was selected to tell the parents how severely retarded the child was and what little could be expected of him. Because of the mother's poor physical and emotional state, institutional care was recommended for the child but that decision was left entirely to the parents. Parents of mentally retarded crildren almost always feel guilty about making this decision and need the support of all the team members. They feel guilty about giving up their own child and yet if the child remains at home they are apprehensive about his effect on the other children.

Parents Face Difficult Decision

Tommy's parents, with a great deal of mental and emotional anguish, decided upon the residential type of care. They asked that arrangements for admission to the Hospital for the Mentally Retarded be made as soon as possible. After admission to the hospital, the public health nurse continued in the home weekly, acting as liaison between family and hospital until both the parents and the child adjusted to the new situation. Tommy's parents now believe that they have done the best for all members of the family. The physical and emotional health of the home has greatly improved.

While some children profit from partial or complete care outside the home, others with the parents being helped through counseling and guidance. Such a program was decided on for a little fellow we shall call Dickie.

Dickie was nearly six years old when he came to our attention. His parents were young and financially insecure when he was can be managed well in their own homes born. The mother returned to work when the infant was a few weeks old, leaving him in the care of friends and neighbors. During these first years of life, she saw him only during the sleeping hours and with her limited knowledge of normal child development, she was not aware of how slowly Dickie was progressing.

After the birth of a second child, the mother gave up her job and assumed the full care of both children. She then started making comparisons in their developmental and behaviour patterns; but it was not until Dickie was nearly four years old that the parents consulted a psychologist upon the advice of the family physician. Evidently the diagnosis of mental retardation was not acceptable to them and they convinced themselves that the doctors were wrong and that the child would outgrow his problems and difficulties. They also felt that financially they could not afford professional guidance and decided to "let nature take its course."

After two trying years, the parents began to face the fact that they did need help with the child's management and training. Dickie was also approaching school age and they were concerned about his education.

The mother first learned of our services through a neighbor who was familiar with our State Board of Health program for the mentally retarded. By now the parents were desperate and open to any suggestion. The child was socially unacceptable to them and to others. He was a noisy and destructive child, although at times he was completely withdrawn and out of reach. His parents felt inadequate in dealing with him in every respect. They had had no success with toilet training, dressing, or eating habits. The mother was extremely nervous and confused. She did not understand her feelings toward herself and the child. She readily agreed to psychological examination preliminary to further planning for him. Examination revealed an emotionally disturbed child with effective intelligence at the retarded level. He also had severe language retardation. The psychologist recommended that psychotherapy be instituted as soon as possible and that the mother be given guidance in handling the child, in training and in stimulating him to respond constructively to social situations. The diagnosis and recommendations were discussed and interpreted to the family. When they understood Dickie's need for psychotherapy, they agreed to clinic referral and the necessary arrangements were made. The public health nurse continues to work closely with the psychologist and to make weekly visits into the home. Her acceptance of the child as he is has helped his parents to accept rather than reject him, as they were unconsciously doing. Dickie responds favorably to this new sense of worth and his father now actually enjoys doing simple things with him.

During the public health nurse's weekly visits, Dickie's mother is helped with planning daily routines, simple child training methods, and discipline. The visits are unhurried and the mother is given time to discuss her problems, successes and failures with the child in an effort to help her understand him better. We are trying to make her feel that she is not alone in helping her child reach his full potentials. A part of each visit is set aside for actual play with the child. These activities may consist of reading, coloring, block building, or music. Within a few months the child's interest span has increased; he has become more sociable and less self-centered. His vocabulary has increased and he plays better with other children. It is hoped that with continued therapy and counseling at the clinic, together with the weekly visits of the public health nurse, Dickie will be able to enter a special class by this fall.

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A PLEA FOR INTENSIFIED INVESTIGATION OF VENEREAL INFECTIONS

● The physician who treats patients for venereal disease must assume full responsibility for optimum management of the situation. The health department offers trained investigators to help the busy physician fulfill this responsibility more easily without violating the strict confidentiality of the patient-doctor relationship.

Winder L. Porter, M.D.*

The advent of the antibiotic era has made the treatment of venereal diseases more simple, more economical and more effective. Consquently more physicians undertake to manage these diseases as part of their general practice This has made acceptable treatment accessible to more persons but carries with it increased responsibilities. The physician who undertakes such management needs to be thoroughly acquainted with the differential diagnosis and with the natural history of these infections. It is not enough to treat the plusses, but one must have some conception of the stage of syphilis at the time of treatment so as to know what to expect in response to treatment. With infectious syphilis and gonorrhoea, the responsibility does not cease with the termination of treatment but the patient should be followed at appropriate intervals and long enough to be sure the desired response has been attained.

There is a responsibility to determine the source of the infection, and also to protect others who may unwittingly have been infected by the present patient. With late syphilis, this applies to examination of the marital partner and of the offspring of infected mothers. With possible congenital infection, parents and siblings warrant investigation. With recently acquired infection, the investigation must involve not only the marital partner but also all with whom the patient may have cohabited within the period of infectiousness. With gonorrhoea so difficult to diagnose in the female, it is good practice to treat on an epidemiologic basis all those who have been named as contacts of males with gonorrhoea. It is also accepted practice to treat prophylactically all persons known to have been sexually exposed to infectious syphilis.

All Contacts Must Be Obtained

Many a physician is quite convinced that he is capable of conducting a satisfactory venereal disease interview to elicit contacts of infected cases. He is usually quite pleased when he obtains one or two contacts and feels entirely satisfied if the man brings his wife in for examination even if the paramour is left free to infect someone else. Few can spare the time necessary to elicit all contacts which may be obtained, and most are quite unprepared to accept the role of homosexual activity in this regard. Perhaps suspicion is aroused when the patient has effeminate actions and characteristics, but the possibility is not even considered when the patient is a burly truck driver, particularly if he is married and has a child or two, and certainly not when the patient is a pillar in the business or professional world. Many urban areas report a disproportionate percentage of new syphilis cases in males because of homosexual spread. A peculiar feature of these homosexual exposures is the wide disparity in status of the individuals involved. The male is apt to indulge his promiscuous heterosexual activities with women in his own social sphere, if not his secretary or waitress, while the homosexual seems to have utter disregard for the age, race, culture, social status or economic position of his contacts. Some are discreet enough to seek their escapades in places remote from their own homes and flock to urban areas where their perversions are more readily concealed.

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*Director, Division of Venereal Disease Control.

Long, Tedious Sleuthing Required

Specialized training is necessary to elicit these contacts and long tedious sleuthing is required to locate them and get them to examination and appropriate treatment. Nationwide, some fifteen per cent of venereal disease contacts named live outside of the state where reported. With a small state like Delaware, a much larger percentage will be non-resident and therefore require organized cooperation between workers of several states to secure for them necessary examination and treatment. Your health department offers the services of trained interviewers and investigators to facilitate this epidemiologic effort. The investigator stands ready to assist the physician in applying necessary diagnostic modalities, with interviewing the patient for contacts and for interpretation of his infection to him, with locating and returning delinquent patients for further study, and with procurement of drugs needed for the medically indigent VD patient.

Some physicians hesitate to call upon a trained interviewer to assist with VD problems for fear there will be a violation of the sacred patient-doctor relationship. Persons assigned this responsibility are thoroughly indoctrinated with the principles of absolute confidence, avoidance of offense and of strict regard for the social and marital complications which may develop. They are chosen because of tact, personality, resourcefulness, intelligence and demonstrated sense of responsibility, and these basic qualifications are supplemented by continuous training and development of newer techniques. Actually most patients appreciate that this is an area which puts too much demand upon the doctor's valuable time and are readily convinced that he has their best interests at heart when he enlists the aid of a trained investigator. Most also accept that their personal confidence will be respected and that their role of informer will not unwittingly be revealed.

BFP Serologic Test

The problem of the Biologic False Positive serologic test is real, extensive and necessarily cause for great concern. With reduction of the per capita incidence of syphilis, the percentage of reactive serologic tests which are BFP naturally increases. The over-all incidence in the entire population can only be guessed, but it is still certain that in lower socio-economic groups syphilis is by far the most common cause of reactive serologic tests. Physicians who draw their clientele principally from other brackets are prone to disparage the significance of reactive tests in their patients, particularly when in low titer. The admonition here is to give them full credence particularly when the result is sustained on repeated testing and there is no obvious explanation for the BFP. Before shifting to another laboratory, repeat the test in the same laboratory to ascertain if the findings are confirmed and sustained. Review the history for previous S.T.S. results and for indications of possible lesions or for serial injections at any time. Examine the spinal fluid and look for physical signs. Many physicians escape the realization that most of the syphilis we see today is in the latent stage and therefore is not detectable by the most exhaustive examination. But enough do have sufficient structural atteration to make the search worthwhile. Many infections in young adults will be congenital and there will be corroboratory evidence in the form of stigmata or of infection in other members of the family. Examine these relatives. Explore the role of previous antibiotic therapy. Employ the RPCF test as a further screening device bearing in mind that while a reactive result is considered quite significant, a negative result does not exclude either recent infection, or old infection modified by treatment long ago. With the RPCF negative, the liklihood that the patient needs treatment is greatly reduced. The Delaware State Board of Health Laboratory will perform the RPCF test in cases where the history and previous test results are reported on an appropriate form. As a final screening procedure, TPI testing can be secured but only in cases which are thoroughly documented and have been completely studied via routine tests, spinal fluid examination and RPCF testing.

Syphilis Information Often Buried

Serologic testing is often a part of routine hospital admission procedure. It is sometimes difficult to see why the practice is continued as so little attention is paid the result. The discharge summary often devotes considerable space to evaluation of abnormal serum proteins, or cholesterol, or other disturbances in blood chemistry while not a word is devoted to syphilis as a diagnostic consideration. Indeed the patient may die and there be an extensive exposition of the autopsy findings with syphilis again remaining unmentioned. The significance of the reactive S.T.S. will often come to light if one just takes the time to review the patient and his history. Further screening as outlined in the preceding paragraph is just as important as many of the detailed studies pursued in the effort to explain other abnormal chemical determinations. The modern practitioner of medicine has failed to serve his patient adequately when he does not give syphilis the respect and consideration it still deserves, particularly since such handsome rewards may follow relatively simple treatment.

SUMMARY

1. Most venereal infections can readily be handled by the general practitioner.
2. In treating such cases, the practitioner must assume responsibility not only for adequate treatment and follow-up, but also for extension of investigation to other contacts who may be infected.
3. Prophylactic treatment of females exposed to gonorrhoea and of all persons exposed to infecious syphilis, is good medical practice.
4. The health department desires to cooperate with the physician so that his services become more effective.
5. Trained investigators are available to assist the physician in his VD control efforts.
6. Possible BFP reaction presents a problem which often can be resolved if study of the patient is pursued systematically.
7. Reactive tests on routine hospital admissions and similar studies warrant respect and consideration as well as diligent attempts to document the true status of the patient.

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MAKE A NOTE ON YOUR CALENDAR OF THIS IMPORTANT DATE

NOVEMBER 8th, 1960

October 15th is the last day for registration in Delaware

● The author who was contacted in March, 1959 by a representative of the Avon Club in Felton, Delaware, and asked to speak at their next meeting on the subject of Health and Sanitation, presents this survey of the situation.**

A SANITARY SURVEY OF FELTON

MAYNARD H. MIRES, M.D.*

Felton, Delaware is located twelve miles due south of Dover on the dual highway, and has a population of 450 (according to the latest estimates). It would be a typical lower Delaware farming community, except for the added advantage of having a large poultry processing plant owned by Swift & Co., which employs about 130 men and women. For this and other reasons, Felton is growing far beyond its conventional limits established in 1883. The pattern of suburban growth thus emerges; the tendency is for the younger couples and the newcomers to build their homes outside the town limits, leaving the "old-timers" in their large mid-Victorian homes nearer the center of town. In a situation like this, there is always the question of who is better off: the person receiving all the town services or the person who pays no town taxes?

Now the resident of Felton cannot complain of high taxes, but he can and does complain of the lack of a public sewerage system. The Avon Club members had this in mind when they invited someone from the State Board of Health to speak. They listened patiently that day in April while a sanitarian and I discussed the aspects of environmental sanitation and related a long list of complaints we had received in the past concerning inadequate individual sewage disposal systems in their town. We told them how in many cases the building lots in the older part of Felton were too small to accommodate systems, the ground water table was too high for the digging of seepage pits and there was always the problem of what to do with laundry waste.

A round of spirited and searching questions followed at which time we discovered that these ladies had much more than just a superficial interest in the subject. Thinking to stimulate further activity, we left them a copy (just recently issued) of a National Health Council publication, a guide for the evaluation of one's community health services.

The month of June brought with it a fresh request, this time for a complete sanitary survey of the town of Felton and adjacent areas. Now, sanitary surveys have been done in many places over the past 110 years (since Shattuck's "Report of the Sanitary Commission of Massachusetts")

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**The Avon Club is similar to women's organizations in other communities which are all united in one large "National Federation of Women's Clubs." Its members who are drawn from all walks of life find an outlet for their creative ideas.

Address: ....
Occupant's Name: ....
Number of occupants .... Length of occupancy ....
Owner's Name: ....
Address: ....
Lot: Width .... Depth ....

WATER SUPPLY
Public ...... Individual ...... Is public supply available ......
Well:
Driven .... Drilled .... Depth ....
Distance from: tile drains or sewers ...... ft. Septic tank ...... ft.
tile field .... ft. seepage pit .... cesspool ....ft.
privy .... ft. other .... ft.
sanitary defects: ....
Results of analysis: 1 ml .... 10 ml ....

SEWERAGE
Privy .... Individual .... system
Privy: Clean .... flytight pit ....
surface drainage satisfactory ....
Individual system: grease trap .... septic tank ....
seepage pit .... tile field .... cesspool ....
Dimensions of units ....
Condition: Satisfactory .... overflowing ....
has overflown .... frequently ....
infrequently .... how corrected ....
other difficulties ....

FACILITIES
Garbage grinder .... automatic washing machine ....
automatic dishwasher ....
Any complaints of insanitary conditions in vicinity ....
if yes, identify ....

TRASH PICK-UP
By homeowner .... someone else ....

so that we were pleased to accept this rather routine duty. A questionnaire form for this purpose had previously been developed by the Division of Sanitary Engineering, and covered the items listed above.

The Town of Felton originally was laid out within square boundaries so it was easy enough to divide the area to be surveyed into quadrants and number each home thereof. The four inspectors devoted the week of June 8-12 to this project, meeting with a most favorable reception as they went from door-to-door. Publicity for the survey had been handled by the ladies, so everyone was well prepared for our visit. As a sidelight, we might mention here that 10% of the homeowners made some alteration or improvement in their environmental sanitation as a result of this pre-survey publicity.

One hundred ninety-three homes and other types of buildings were visited during this week, representing more than 95% of the total. One hundred seventy-three of these were found to be on the municipal water supply, and the remaining 20 had a private supply (16 of these had access to the water main but had not taken advantage of it).

Findings

The most important item, sewage disposal, showed that 68 had an outside privy and 15 of these were not acceptable according to State Board of Health standards. One hundred fifty-six had individual sewage disposal systems; 47 of these were unsatisfactory at the time of the survey, and 11 others had had trouble in the past. It is, of course, obvious from simple addition that some houses had both a privy and a sewage disposal (water-carriage) system.

Only 2 houses had garbage grinders. This is not surprising in view of the fact that the great amount of water needed for such an appliance automatically necessitates a 50% addition in one's total seepage area.

Forty-three houses had automatic washing machines; the wash water was then disposed of in the following ways:

A. Three were connected to the sewage disposal system.

B. Sixteen had a separate system.

C. Twenty-five had no system at all, but discharged it into the street or a nearby ditch.

The question on trash pick-up showed that 59 homes had their trash hauled away by a local gentleman who does this regularly for a small fee. Fifty householders hauled their own trash away. The others apparently had no trash!

These findings were presented to the next meeting of the Avon Club, along with the recommendations that a firm of consulting engineers be hired to come to Felton and estimate the cost of a system of collecting sewers and a treatment plant. The ladies agreed, and then countered with a few recommendations of their own:

1. Let's investigate other aspects of health and sanitation in Felton.

2. There should be added to the National Health Council booklet a section on housing. (Felton, as any other community, has some eyesores which ought to be torn down.)

3. Why don't we have a local board of health which would be empowered to deal with more than gross nuisances or in emergency conditions of epidemic disease?

All of the above have been acted upon, except the one calling for consulting engineers. However, when money is found for this project, you may rest assured that it will be done. The mayor and town council, incidentally, have not stood idly by while their womenfolk did all the planning; they, too, are vitally concerned in this future improvement.

The National Health Council has been greatly impressed by activity going on in two American communities as a result of its "Guide:" Gastonia, North Carolina and Felton, Delaware. There is even some talk of a little financial help if these communities take the necessary steps.

SUMMARY

The official health agency in this story had been struggling along with the problem of sewage disposal in a small Delaware town until a group of club women showed them the way. Having been furnished with a copy of the "Guide to Community Health Services" by the county health officer, this study group set about to obtain their objective in three steps:

1. All members of the organization were urged to become familiar with basic sanitary needs and suggested standards of practice to meet these needs.

2. They were urged to measure local sanitary needs and to inventory the adequacy of facilities to meet these.

3. They planned activities and programs designed to bring about the indicated changes.

THE PATIENT, THE PHYSICIAN AND THE CHIROPODIST

● The chiropodist, working in his office and in the hospital clinic, is an importnt member of the medical team, particularly in the treatment of diabetes.

V. Leonard Brown, D.S.C.*

The patient, who for the first time in his life realizes that he has diabetes will soon learn that two of his best friends in the medical field will be the Physician and the chiropodist. He will find the physician to be understanding, outline the proper diet and prescribe the proper amounts of insulin and/or the new oral tablets. The patient then must be made to realize that the care of his feet is just as important as the following of his diet and the administration of his insulin. He must realize that the foot is a greater distance from his heart than any other part of his body and is the last place for arterial blood to reach. With increased age, it will become the most easily infected part.

Home treatment on corns and callouses with medicated corn pads can be the beginning of infection, ulcers, gangarene and even death for the diabetic. Many people develop the so-called "club nails" or hypertrophied toenails that grow fast and thick. They must be cut with the utmost care as the nail plate curves and the normal epidermis grows up into the thickened nail and is too easily caught in the toenail clippers and a deep cut is easily inflicted.

The average diabetic should follow the normal foot hygiene rules and should visit the chiropodist periodically, the time between visits to be determined by the foot specialist. The chiropodist sees many different people every day and is always alert for diabetes in his patients, whether new ones or old.

In many instances, the chiropodist will notice in one of his regular patients a rapid loss of weight; a complaint of chronic fatigue, cuts or small sinus tracts at the bases of deep corns that are slow to heal, a complaint of numbness in the toes or feet or a flatulance in the tissues around the heel. When these signs appear, he tests the urine for sugar and finding any trace, he immediately sends the patient to a laboratory in a hospital for a blood sugar and if the results are positive, the patient then is sent to his physician.

The scope of the chiropodist's practice is clearly defined in the Chiropody Practice Act of the State of Delaware which is:

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*Doctor of Surgical Chiropody.

> "The diagnosis and the medical, surgical, mechanical, manipulative and electrical treatment of all ailments of the human foot and leg, excepting amputation of the foot or leg or the administration of an anesthetic other than local."

The foot specialist has no desire to practice beyond his limitations and refers any case that is systemic in origin to the proper practitioners.

The chiropodists of the city of Wilmington are staffed on three of the four city hopsitals and conduct clinics in these hospitals at regularly scheduled times.

This gives the hospitals another department to better serve the community and add to its stature. The chiropodist in these clinics sees many patients and instructs over and over again the patient with diabetes and/or peripheral vascular disease and the importance of regular foot care.

Many medical directors of large hospitals have noted a drop of fifty per cent in amputations of the lower extremities after chiropodist were staffed in the hospitals and would examine and/or treat all patients in the metabolic department. It is compulsory for all new diabetic patients to see the chiropodist on their first visit whether they do or do not have a foot complaint. Then the foot doctor tells them when to report back to the foot clinic.

More patients with peripheral vascular disease or diabetes develop infection, ulcers or gangrene from "corn pads" than from any other cause and the hazards of using these products must be repeatedly drummed into the patient's mind. Home treatment with razor blades is a cardinal sin and may be the first incision of many incisions that could terminate in amputation of the extremity.

It is not the treatment of the infection in the diabetic that is paramount; it is the prevention of infection.

Contributors Column

Ralph M. Myerson, M.D., Tufts College '42, has done extensive postgraduate work in neurology, gastrointestinal diseases and endocrinology and has published more than 50 articles dealing with the application of new techniques for diagnostic and therapeutic purposes. Dr. Myerson is also clinical professor of medicine at Woman's Medical College of Pennsylvania.

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Dr. Fred A. Stonesifer, University of Pittsburgh and Ph.D., Pennsylvaia State University, has served on the staff of the Bureau of Mental Health, Penna. Department of Welfare and on the staff of the Selinsgrove State School for epileptics and mentally retarded. Dr. Stonesifer is president-elect of the Delaware Psychological Association and a representative for Delaware for the American Association on Mental Deficiency.

Winder L. Porter, M. D. received his degree in Medicine from the University of Pennsylvania where he also earned his M. P. H. He served a rotating internship at the Cleveland City Hospital and a year as resident in Pediatrics at the Provident Hospital in Chicago, Illinois. He joined the staff of the State Board of Health in 1942, working principally with the child health and venereal disease programs. He is certified by the American Board of Preventive Medicine and Public Health, and is a charter fellow of the American College of Preventive Medicine.

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Eleanor R. Belfint, R.N., and Louise W. Sylvester, R.N., are both certified in Public Health Nursing by the University of Pennsylvania. Miss Belfint is a graduate of St. Joseph's Hospital School of Nursing, Philadelphia. Miss Sylvester is a graduate of the Delaware Hospital School of Nursing, Wilmington.

Books

Recent Accessions to the Library of the Delaware Academy of Medicine

Bacteriology and Immunology

Gunsalus, I. C. and Stanier, Roger Y., eds.: The Bacteria, Volume I: Structure, 1960. Academic Press

Cardiovascular System

Warshaw, Leon J. ed.: The Heart in Industry, 1960. Hoeber

Denistry

Hirschfeld, Leonard: Minor Tooth Movement in General Practice, 1960 Mosby

Stinaff, Robert K.: Dental Practice Administration, 1960. Mosby

Gastrointestinal System

Wells, Charles and Kyle, James: Peptic Ulceration, 1960. Livingstone

History of Medicine

Cunningham, H. H.: Doctors in Gray. The Confederate Medical Service, 2nd ed., 1960. Louisana State University Press

Rogers, Fred B.: Help-Bringers. Versatile Physicians of New Jersey 1960. Vantage Press

Miscellaneous

Spiegelman, Mortimer: Ensuring Medical Care for the Aged, 1960. Irwin

Stanford Research Institute: Chiropractic in California, 1960. Haynes Foundation

Musculoskelatal System

Mennell, John McM: Back Pain, 1960. Little, Brown and Company

Nervous System

Works of the Institute of Higher Nervous Activity: Pathophysiological Series, 1957. Volume III. Academy of Sciences of the U.S.S.R.

Obstetrics and Gynecology

Smout, C. F. V. and Jacoby, F.: Gynecological and Obstetrical Anatomy and Functional Histology, 3rd ed., 1953. Williams and Wilkins

Pediatrics

Rose, Harry M.: Viral Infections of Infancy and Childhood, 1960. Hoeber-Harper

Schaffer, Alexander J.: Diseases of the Newborn, 1960. Saunders

Pharmacology

Bartter, Frederic C.: The Clinical Use of Aldosterone Antagonists, 1960. Thomas

Physiology

Ruch, Theodore C. and Fulton, John F.: Medical Physiology and Biophysics, 18th ed., 1960. Saunders

Psychiatry

Sher, Elizabeth; Messing, Eleanor; Hirschhorn, Theodoria; Post, Enis; Davis, Annette and Messing, Arthur: The List Method of Psychotherapy, 1960. Philosophical Library

Surgery

Hartwell, Shatuck W.: The Mechanisms of Healing in Human Wounds, 1955. Thomas

Thorek, Max: Surgical Errors and Safeguards, 5th ed., 1960. Lippincott

Thorek, Philip: Anatomy in Surgery, 1951. Lippincott

NEW CLINICAL CENTER STUDIES

The National Institutes of Health, Bethesda, Md., enlists the cooperation of physicians in studies of the colon and rectal carcinoma. Encouraging results in the treatment of gastrointestinal carcinoma have been reported using pyrimidine analogues 5-fluorouracil and 5-fluorodeoxyiridine.

The Chemotherapy Service is conducting studies of these agents in order to better define their place in the treatment of gastrointestinal neoplasm. Patients for referral must be in good general condition in order to tolerate adequate doses. Patients can be accepted if they are ambulatory, have normal leukocyte count, renal and hepatic function and if they have metastases in the lung, peripheral lymph nodes or skin.

Write or call: Dr. Clyde O. Bradley, National Cancer Institute, Bethesda, Md., or call: OL 6-4000, Ext. 4251.

President's Page

Lemuel C. McGee

More than a century ago Alexis de Tocqueville reported: "These Americans are the most peculiar people in the world. You'll not believe it when I tell you how they behave. In a local community in their country, a citizen may conceive of some need which is not being met. What does he do? He goes across the street and discusses it with his neighbor. Then what happens? A committee comes into existence, and then the committee begins functioning on behalf of that need, and you won't believe this but it's true. All of this is done without reference to any bureaucrat. All of this is done by the private citizens on their own initiative . . . The health of a democratic society may be measured by the quality of functions performed by private citizens."

This heritage of the American way of life was established by our forefathers. Maintaining such a way of life requires the acceptance of responsibilities of citizenship and hard work by individuals. Osler called "work" the master word in medicine.

The effectiveness of the Medical Society of Delaware is determined by the work of its individual members. Their contributions are organized and multiplied through the device of committees. The responsibilities peculiar to our profession are many, the urge for accomplishment is a mighty incentive. Our Founding Fathers never lost their faith in their ability to meet the obligations of everyday life. We can do no less.

Currently our nation is in a political swivet as to who of our senior citizens need special medical care, how much, how is it to be provided, how is it to be paid for. We need to incite hard thinking on the part of our fellow citizens about the many factors and implications involved in these issues. Their stake in the subject is greater than that of physicians inasmuch as their welfare and lives are involved whenever political machinations lead to deterioration in the medical service available to them.

In most communities health services presently available are not being used maximally. Hospitals, voluntary agencies and physicians offer services which can be increased as the need is identified. Motivation for utilization of such services must accompany their creation and extension.

Those who need any form of medical care should be allowed to participate in planning for such care. This is a basic factor in the phenomenal growth and effectiveness of voluntary prepayment insurance plans. If legislative efforts are directed toward the control of inflation, our senior citizens will plan successfully for themselves. There is not now, and I doubt that there will never be, a satisfactory substitute for personal responsibility in health preservation at any age level of adult life. Have we done our part to encourage the recognition of such facts by our patients, our friends, our neighbors? They are the ones who lose or gain by political manipulations; we who are the technicians in bringing to them the art and science of medicine continue to practice our beloved profession be we slaves in a Pharoah's court, as was Imhotep fifty centuries ago, or members of a society dedicated to free enterprise and the democratic way of life.

Editorials

ALLEN FREAR AND THE GENERAL QUESTION OF GUTS

Guts, says our dictionary, is stamina or grit; see fortitude. Stamina, grit and fortitude seem to characterize Senator J. Allen Frear's recent action in the Senate Finance Committee on the question of medical care for the aged, which, in the opinion of many, will be the major domestic issue in the 1960 elections.

The Republican and Democratic national platforms draw reasonably clear lines of difference on the issue, with Democrats favoring medical benefits for all social security pensioners and the Republicans advocating selective approach with local determination of need and benefit, financially assisted by the federal government.

Headlines to the contrary notwithstanding, organized medicine has a very definite legislative proposal to help the elderly. Title VI of the Ways and Means Committee's bill (H.R. 12580), proposing an expanded program of aid to the states for aged care, has been unequivically endorsed by the AMA. This bill was introduced by Chairman Mills for the predominantly Democratic Committee, which after months of study could not in good conscience recommend the Forand approach embodied now in the Democratic platform. Passed in the House and referred to the Senate Finance Committee, the Mills Bill has been the subject of enormous pressure aimed at liberalizing it to conform to the platform on which Senators Kennedy and Johnson must run.

Now comes the interesting part. Ranking Democrats of the Finance Committee, after Chairman Byrd, are Senators Robert S. Kerr of Oklahoma and J. Allen Frear, Jr., of Delaware. Both men run for re-election this year. After the conventions, in view of the platforms, before the elections, Frear and Kerr wrote a Senate substitute on medical care for the aged, renouncing completely the compulsory, something-for-everyone, social security approach, and adopting the principle of local determination. Despite heavy pressure, with help from Delaware's John J. Williams, ranking Republican, he persuaded the Committee to adopt this version.

Now, all successful office-holders are partisan politicians. Without a party and with a miracle, you can be elected. But even the miracle won't hold up in the daily wear and tear of the legislative process. There is no surplus of successful politicians who will fight for their principles right down to the election, despite the disapproval of the party leaders and the platform. To do this takes conviction and the courage to stand on that conviction. It takes guts. Allen Frear has them.

In Brief

Brother Baboon

The African baboon may hold the key to arteriosclerosis research. For the first time in medical history a creature has been found that has certain similarities to man in the developing of arteriosclerosis. Dr. David H. Baeder, supervisor for research for Ives-Cameron, addressing the Fifth Conference on Bio-Chemical Problems of Lipids at Marseilles, discussed studies being conducted with baboons bred in the U.S.A., and those captured in Kenya, Africa. Unlike many laboratory animals, the baboon possesses some of the same fatty substances as man and develops arteriosclerotic symptoms spontaneously.

New Drug Rulings By FDA

Sweeping changes are going to be required in the labeling of prescription drugs according to the Food and Drug Administration. Stronger regulations will be instituted to insure that physicians receive adequate information about drugs they prescribe and to insure the safety of new drugs. They include: complete information on labels regarding the use, hazards, side effects and precautions in administration of drugs; that new drugs be kept off the market until confirmed by the FDA.

The Ides Of October

For those who must register to vote in the forthcoming presidential election, October 15th has been set as positively the last day in Delaware for eligible residents. Make a note of this on your calendar. Also allot time on the November 8th date in your appointment book for both yourself and your nurse and/or medical assistant to step out and vote.

Medical School Applications Trend

Applications for the year 1959-60 show that for the third consecutive year, the number of individuals applying to U.S. medical schools has decreased, although the over-all number of acceptances increased slightly. It is interesting to note that in the peak period, 1948-50, of an average of 24,338 applications, 7,062 were accepted. During 1959-60, 8,510 applications were accepted of 14,951 made to the schools.

Moonhouse

Algae will supply the necessary oxygen in a 40-ft. insulated ball which has been designed by the Martin Co., under the direction of their chief of space medicine, Dr. James G. Gaume. Divided into four levels, this "closed ecology" will contain hydroponic tanks, animals in cages, a garden—taking up one-third of the space—and living quarters for five astronauts. Even in this lunar house, dividing the chores seems to be a snag, to be ironed out during preliminary tests on earth.

Declining Ratio

In line with the national trend, the number of physicans per capita in Delaware has declined in 1959, according to the Southern Regional Education Board. Delaware has slipped to third place with a total of 540 physicians in this regional survey; Maryland ranks first; Florida second.

Personal Glimpses

Hal W. Geyer, M.D., has been appointed chief, Department of Neuropsychiatry at the Beebe Hospital . . . The American Trudeau Society has changed its name to the American Thoracic Society . . . Members of this national medical group in Delaware are: Drs. Gerald A. Beatty, Lawrence Phillips, Leonard P. Lang, Nathaniel Young, Lewis B. Flinn, E. Willis Hainlen, Wilmington; Felix Mick, M.D., Milford; and Garrit W. H. Schepers, M.D., Newark . . . Nathaniel Young, M.D., succeeded E. Willis Hainlen, M.D., as medical director of Emily P. Bissell Hospital on Dr. Hainlen's retirement, September 15th . . . Gerald A. Beatty, M.D., delivered the address at the 1960 graduation of the Beebe Hospital School of Nursing . . . Daniel J. Preston, M.D., sponsors an annual award for outstanding achievement in surgical nursing to a member of the graduating class, St. Francis Hospital School of Nursing . . .

Growing Interest In Virology

Ruling out suspected cases, thereby giving mental relief to patients and their families as well as avoiding epidemic alarms, has been one of the roles played by Delaware's Virus Laboratory during its first year. Hepatitis research has been proposed as its next project. Eugene R. McNinch, M.D., president of the State Board of Health, congratulated the organization on its activities. Wilmington's health commissioner, James C. Strong, M.D., presented a check to George J. Boines, M.D., president of the Virus Laboratory, to cover the cost of future virus tests for the City Department of Health.

Expansion For Beebe Hospital

Beebe Hospital student nurses are occupying the new $260,000 structure which has been named the Jean Ellen McConnell Nurses Home in recognition of the services rendered by Mrs. McConnell, a member of the Board of Directors.

James Beebe, Sr., M.D., president of the Board, received a letter from the Joint Commission on Accreditation of Hospitals stating that the Beebe Hospital has again been accredited and commended for "maintaining standards deserving of accredited station and for constant effort to improve the quality of patient care."

New Appointment

Charles K. Bush, Jr., M.D., chief inspector for the American Psychiatric Association's Central Inspection Board, has been named to the new position of Deputy Superintendent of Delaware's mental health program. In his new post, Dr. Bush will serve as assistant to Dr. Tarumianz in the administration of three institutions in two mental programs. He will take up his new duties in December.

Anti-Coagulant Therapy

Because the number of patients using anti-coagulants in long-term admininstration has been increasing rapidly, Endo Laboratories has just released a patient-aid booklet for physicians who instruct patients in this therapy, and an "emergency" identification card for the patient to carry as a safe-guard. For copies of this free booklet and card write to: Endo Laboratories, Richmond Hill 18, N.Y.

Vaccinia Immune Globulin (V.I.G.)

This hyper-immune gamma-globulin, prepared from blood provided by the Armed Forces from recently vaccinated service men, contains a high titer of anti-bodies effective in arresting abnormal infection with vaccinia virus, the agent used in vaccination to produce immunity to the related but dangerous virus of smallpox. A program for the preparation and distribution of V.I.G., sufficient to meet the needs of the country, has been established by the American National Red Cross in cooperation with the Armed Forces of the United States as another regular service of the Red Cross blood program. Physicians requiring V.I.G. should telephone the nearest consultant, whose name, address and telephone number may be obtained from the nearest Red Cross regional blood center. The consultant is equipped to arrange immediate transportation to the attending physician.

Flying Physicians

Delaware doctors are organizing a state chapter of the Flying Physicians Association, which is inaugurating a nation-wide Flying Disaster Program. These flying physicians are banding together to volunteer their services for national emergencies. Organizers for the Delaware chapter are: J. Richard Durham, Jr., M.D., State Chairman; Norman L. Cutler, M.D., Co-chairman; Philip D. Gordy, M.D., Disaster Chairman; Carl I. Glassman, M.D., J. F. Hughes, M.D. and Clarence E. Graybeal, M.D.

For That Efficient "Right Hand"

Medical assistants—the essential right-hand for most practicing physicians—will convene for the fourth annual national convention of the American Association of Medical Assistants in Dallas, Texas, October 14-16. The Leadership Seminar will feature lectures on credit and office management plus a round-table discussion of physician-assistant-patient relationships. (A reminder to physicians: Paying your assistant's way is tax-deductible.)

Psychosomatic Medicine Course

Temple University Medical Center, Department of Psychiatry, offers a 20-week postgraduate course in phychosomatic medicine, beginning October 5, 1960. The course, conducted by specialists from the departments of psychiatry, internal medicine and ob-gyn—with H. K. Fisher, M.D., serving as director—is approved for 80 hours of Category I credit by the American Academy of General Practice.

TV To The Fore

A new method of fluoroscopic examination was introduced recently in New York City by Russell Morgan, M.D., of Johns Hopkins University. By using a television technique, the examining physician can intensify the image on a screen in full view of the patient and other interested people and at the same time substantially reduce the radiation exposure to the patient.

Top Billing

Delaware is one of the 14 states in the U.S.A. in which over 75% of the civilian population is covered by some form of voluntary health insurance protection, according to the Health Insurance Institute. Delaware's figure is 77.1%.

Auxiliary Affairs

"FROM EARLIEST ANTIQUITY" . . .

As a contrast to present day reports of the activities of doctors' wives in county, state, and national auxiliaries, perhaps it is well to consider the discussion of activities of eighteenth century women in general, as published in 1796 by one William Alexander, an English physician.

Dr. Alexander's two-volume treatise appeared under the ambitious title of *"The History of Women from the Earliest Antiquity to the Present Time."* Its value seems to lie in the author's revelation of his own "present time" of 1796 rather than in his recording of "earliest antiquity." He wanders through the latter with an occasional mention of writers to whom he is indebted for information — blithefully dismissing the chore of annotation by having "persuaded" himself that "nothing could be more perplexing to the sex, or to which they would pay less attention, than a long list of authors on the margin."

Dr. Alexander regarded his history of women as the "compilation of a work intended for the amusement as well as instruction of the Fair Sex . . . who now spend many of their idle hours in pouring over novels and romances, which greatly tend to mislead the understanding and corrupt the heart . . ."

Through thirty-one chapters, Dr. Alexander discussed a variety of subjects such as the education of females, their employments and amusements, advantages and disadvantages, character and conduct, delicacy and chastity, dress, courtship, matrimony, widowhood, restrictions and customs. It is in the discussion of "employments and amusements" among the ladies of 1796 that Dr. Alexander departed from unbiased factual statements to include a few personal opinions of both sexes.

He said that "Women exempt for subsistence have a great deal of time upon their hands, which domestic duties are not sufficient to fill up . . . In barbaric countries they were slaves to men, ground corn, worked in the fields . . . In 1796," continued Dr. Alexander, "employment is not the mode of the times. In all the polite countries of Europe, those of rank and file as well as those in decent circumstances, having a great deal of time on their hands, with an irresistible inclination to pleasure in whatever form it offers itself, are more often to be met with at the shrine of amusement than of industry. Show, entertainment, or a crowd, the women are more numerous than the men. Theatricals, balls, assemblies, operas, ridottos, and particularly reviews, seem to be the scenes of delight. Riding, walking, sailing, and in some countries, even skaiting, (sic) and being drawn on the ice on sledges, are female amusements. Besides these, and many others too tedious to mention, the women of fashion, spend a great part of their time in receiving and returning visits and in some of the politer nations, modern visiting is not spending a social hour together; it consists only in her ladyship ordering her coachman to drive to the doors of so many of her acquaintances, and her footman, at each of them, to give a card with her name, while the lady of the house, though in the polite phrase, not at home, is looking through the window all the time to see what passes; and in some convenient time after, returns the visit, and is sure to be received in the same manner."

"Shopping, as it is called, is another fashionable female amusement in order to which, two, three or sometimes more ladies, accompanied by their gallants set out to make a tour through the most fashionable shops and to look at all the most fashionable goods, without any intention of laying out one single sixpence. After a whole forenoon spent in plaguing mercers and milliners, they return home either thoughtless of their folly, or which, perhaps is worse, exulting at the thoughts of the trouble and disturbance they have given.

"But of all the happy inventions discovered by modern ingenuity for the killing of time, card-playing is justly entitled to pre-eminence. With an immoderate itch for this amusement, which we are at a loss whether to reckon public or private, both sexes and all ranks and degrees of people are deeply infected; particularly indolent clergy, and women, who having little to do, dedicate themselves so assiduously to play, that the habit is in many so strong, as to be foolishly reckoned even necessary to their existence. To cards, when made use of only to unbend the mind fatigued with study, or to pass away an idle hour, we have no objection, nor do we flatter ourselves, that anything we can say on the subject will,

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BLUE CROSS — BLUE SHIELD ENROLLMENT

The Delaware Group Hospital Service, Inc., announces that September 15-30, 1960 has been designated as a Statewide enrollment period for all Delawareans. There is a contract available for almost every eligible resident; non-group membership, the "65-Limited" contract; "Extended Benefits" contract and student contracts. This is a good time, too, to make contract changes involving coverage and dependents. There will not be another enrollment period until next year. For the convenience of the public, there will be a special evening telephone service: Telephone OL 5-1561 from 8 A.M. to 9 P.M. on week days.

CURRICULUM
FOR TWO-WAY RADIO MEDICAL CONFERENCES*

October 4, 1960 through March 21, 1961
24 Tuesdays, 12:00 noon to 1:00 p.m.

Formal participation on Tuesdays with moderator and A.A.G.P. Category I Credit. The same programs may be listened to on Thursdays at 90.9 megacycles on your own FM radio.

In Wilmington at the Delaware Academy of Medicine
In Milford at the Milford Memorial Hospital
In Dover at the Dover Hotel
In Seaford at the Nanticoke Memorial Hospital
In Lewes at the Beebe Hospital

TOPIC AND FACULTY

October 4, 6	"Oral Hypoglycemic Agents." Charles T. Lee, Jr., M.D., Associate in Medicine, University of Pennsylvania
October 11, 13	C.P.C.—Pennsylvania Hospital Staff
October 18, 20	"Staphylococcal Infections." Robert I. Wise, M.D., Magee Professor of Medicine, Jefferson Medical College
October 25, 27	"Cerebral Vascular Insufficiency." Frank A. Elliott, M.D., Neurologist to Pennsylvania Hospital; Professor of Clinical Neurology, University of Pennsylvania
November 1, 3	"Rheumatic Fever." Sidney Friedman, M.D., Chief Cardiologist, Children's Hospital of Philadelphia
November 8, 10	"Afibrinogenemia." Lennard L. Weber, M.D., Associate in Obstetrics and Gynecology, University of Pennsylvania
November 15, 17	"Steroids—Action and Areas of Disease." George R. Fisher, III, M.D., Associate in Clinical Medicine, Jefferson Medical College
November 22, 24	THANKSGIVING WEEK—NO PROGRAM
November 29, December 1	Transatlantic Program—Endocrine Case Presentation. Comment by Edward Rose, M.D., Chairman, Endocrine Section, Medical Clinic of the Hospital of the University of Pennsylvania; Professor of Clinical Medicine, University of Pennsylvania
December 6, 8	"Salicylate Poisoning." Robert W. Winters, M.D., Assistant Professor of Physiology, University of Pennsylvania

*Produced by the Department of Continuation Education of the Pennsylvania Hospital supported by a grant from Smith, Kline & French Laboratories, Philadelphia

December 13, 15	"Glomerulonephritis." Earl S. Barker, M.D., Assistant Professor of Medicine, University of Pennsylvania
December 20, 22	"Pyelonephritis." William K. Jenson, M.D., Instructor in Medicine, University of Pennsylvania
December 27, 29	"The Diabetic with Infection." Garfield G. Duncan, M.D., Director, Division of Medicine, Pennsylvania Hospital; Professor of Medicine, University of Pennsylvania
January 3, 5	"Therapeutic Abortion." S. Leon Israel, M.D., Chairman, Department of Gynecology and Obstetrics, Graduate School of Medicine, University of Pennsylvania
January 10, 12	"Obesity." Robert W. Hillman, M.D., Associate Professor of Environmental Medicine and Community Health, State University College of Medicine, New York (in cooperation with Nat'l. Vitamin Foundation).
January 17, 19	"Nephropathy of Potassium Deficiency." Robert W. Winters, M.D., Assistant Professor of Physiology, University of Pennsylvania
January 24, 26	"Gout." Richard T. Smith, M.D., Associate in Medicine, University of Pennsylvania
January 31, February 2	"Toxemia of Pregnancy." James D. Garnet, M.D., Assistant Professor of Clinical Obstetrics and Gynecology, University of Pennsylvania
February 7, 9	"Diagnosis and Treatment of Hypothyroidism." George R. Fisher, III, M.D., Associate in Clinical Medicine, Jefferson Medical College
February 14, 16	"Surgery of the Jaundiced Patient." I. S. Ravdin, M.D., Professor of Surgery and Vice-President in Charge of Medical Affairs, University of Pennsylvania
February 21, 23	"Progress in Open Heart Surgery." Julian Johnson, M.D., Professor of Surgery, University of Pennsylvania
February 28, March 2	"Tranquilizers." James H. Ewing, M.D., Associate Professor of Psychiatry, University of Pennsylvania
March 7, 9	C.P.C.—Pennsylvania Hospital Staff
March 14, 16	"Anticoagulants and Fibrinolysis." Norman Makous, M.D., Associate in Medicine, University of Pennsylvania
March 21, 23	"Antepartum Bleeding." Edward H. Bishop, M.D., Assistant Professor of Obstetrics and Gynecology, University of Pennsylvania

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Address*

THE PHYSICIAN AS A CITIZEN OF DELAWARE

Governor J. Caleb Boggs

The practice of medicine has passed through many stages to the advanced science it is today. It has evolved from the sometimes fatal trial-and-error methods of the Old World to the highly specialized techniques of today.

Today, a physician is far more than a prescriber of medicine. Long after his graduation from medical school, he finds himself still studying . . . still reading and learning of the latest developments in research designed to more quickly cure the ills of our people.

The methods of the past are—in many cases—no longer practical. We live in a fast moving world in which yesterday's discovery is rendered obsolete by tomorrow's.

The development of the science of government has not been as dramatic. But progress has been made. New ideas have been offered by the researchers of political science. These have been tested and refined over the years.

When I was asked to discuss "The Physician as a Citizen of Delaware," I was very pleased to have this opportunity because I have long known that a physician can be a particularly valuable citizen of any state. I am not necessarily referring to his obvious contributions as a member of the medical profession. Rather, I am referring to his nature of understanding, his sensitivity to changing needs, and his willingness to accept and try new ideas and methods.

Delaware's Government

The State of Delaware is historically known as the First State. But today, we are nearly the last state when it comes to accepting the new techniques of government. We have allowed the other states to pass us by, and we find ourselves mired down by a 63-year-old Constitution, an antiquated form of government, and some ideas which are akin to medieval medical practices.

Delaware is one of only three states in the nation which does not take advantage of its purchasing power to save our taxpayers money through the accepted practice of central purchasing.

Delaware is one of only 20 states which does not provide a civil service system to protect its state employees from political pressures, guarantee them security, and in turn effect more savings for the taxpayers of this state.

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*Presented at the Annual Meeting of the Medical Society of Delaware, September 9, 1960, Lewes, Delaware.

Delaware is one of fewer than 20 states which does not have a Department of Finance or some executive agency which is responsible for handling the taxpayer's money in an efficient and modern manner.

Delaware is one of about 20 states which has not yet turned to the cabinet form of government as the most practical methods of fixing responsibility to the voters, rather than allow that responsibility to remain lost in a maze of more than a hundred boards and commissions—more than four hundred members of the executive branch of which not one is elected by the voters of Delaware.

Several years ago, the medical profession accepted the findings of Dr. Jonas Salk and was highly successful in reducing the number of polio cases in the world. Now, you are turning your attention to a new live vaccine which can be taken orally, and in a matter of months, even more people will benefit from this improvement in technique.

Most of the other states are making improvements in their systems of government. The State of New York, which was one of the first to adopt a cabinet system of government through reorganization, is reorganizing again in an effort to effect new economies.

The national experts in the field of purchasing are assisting states which have used central purchasing for years to refine their systems so that even more money can be saved for their people.

But Delaware clings to the old. Confused by those who say the old system was good enough for our forefathers and is therefore good enough for us, we close our eyes to the advantages which new methods and techniques can bring . . . advantages which have been proven in other states, and even in this state during the public hearings the General Assembly held earlier this year.

I wonder where the medical profession would be today if it had adopted this same stand-put attitude that some of our public officials espouse.

Many years ago, the medical profession had to combat the travelling medicine man who claimed that his bottle of tonic would cure everything from dandruff to ingrown toenails. Unfortunately, we still have some public officials who chant the same message. They have a cure for every ill, but they're a little hazy on the prescription.

Suggested Form Of Government Reorganization

The program of government reorganization which I proposed last year is very specific. It calls for a cabinet form of government with twelve major departments to handle the functions of the state government now assigned to more than a hundred agencies, boards and commissions.

It calls for a Department of Finance with a built-in system of central purchasing . It calls for civil service. Each department would be headed by a director appointed by the Governor with the advice and consent of the Senate. This director would serve at the pleasure of the Governor, and this, in turn, would make the Governor responsible for every action or inaction of the executive branch of our state government. The Governor *should* be responsible, because, after all, he is elected by the people as their chief executive. With responsibility thus fixed, the voters will be able to decide whether or not they want to retain this Governor and his party in office.

Today, the choice is not clear-cut. None of the boards and commissions in our government are responsible to the Governor. And some of these boards are controlled by the political party opposite that of the Governor. So who do you hold responsible if you are displeased with the operation of one of these agencies today? If your answer is the commissioners, then what can you do about it. These commissioners do not stand for election.

I said a few moments ago that the government reorganization program I proposed is very specific. This was made clear during the public hearings held by the General Assembly in Dover early this year.

More than one hundred persons appeared before the General Assembly during those hearings to give their views on this program. These witnesses were in favor of the program by a ratio of ten to one. And that ratio is even greater when you stop to consider that many of the witnesses were representing professional and civic organizations with memberships totaling about 53,000 Delaware citizens.

In addition, there were a number of experts in political science who testified as to the experiences of other states. Not one of these gentlemen spoke in opposition to the New Day for Delaware program.

National and local experts in purchasing procedures estimated that a system of central purchasing would save Delaware taxpayers about $700,000 a year.

The national expert in civil service said that system would save Delaware taxpayers $750,000.

A representative of the Council of State Governments supported the belief that a cabinet form of government—with its all important benefit of fixing responsibility to the voters—could effect other economies of operation.

In all, these witnesses told the General Assembly that services could be improved at a saving of nearly two million dollars a year to our people.

Unfortunately, not a single measure included in that program has been brought out of committee for a vote.

At the rate Delaware is growing and with the increasing needs of our people, there is no room for doubt that we must be prepared to meet these demands. When the medical profession has been confronted with a new problem, it has set out to solve it by finding new and better ways to treat it. You cannot solve these problems by raising your fees, no more than can the State of Delaware solve these problems by increasing taxes. This has always been the easy way out for some public officials. Just raise taxes and everything will be all right.

The Time Has Come . . .

The time has come when more money is no longer the entire answer. A study prepared by the Joint Revenue Study Committee shows that, at our present rate of growth and under our present system, our anual revenue needs will be $100,000,000 by 1965. This is an enormous price to pay for lack of progress, and I don't think the taxpayers of Delaware are willing to pay it. That is why I have fought for "reforms before taxes." I think we must modernize our system of government to effect economy, provide services more efficiently, and get rid of the duplication and waste inherent in our present system of government. By enacting reforms now, we will be able to reduce the future tax burden of our people.

At the beginning of my remarks, I said that a physician can be a particularly valuable citizen of any state because of his sensitivity to changing needs and his willingness to accept and try new ideas and methods. There are thousands of other citizens who fall into this same category, but it is your understanding I speak of now.

This question of "reforms before taxes" is one which you must help answer. You have a stake in this fight, and you will either suffer the consequences or enjoy the benefits, whichever the case may be. The important thing is that you think about this problem, familiarize yourself with the program I have proposed, and then decide which course we should follow.

Delaware is financially ill. Some of us seem allergic to progress. I will be anxious to hear your diagnosis and the treatment you prescribe.

PLANNING FOR PROLONGED ILLNESS*

● A plea on behalf of the prolonged illness patient for the continued medical interest of his physician in a more correlated hospital or home care program.

E. M. Bluestone, M.D.**

Robert R. Layton, Jr., M.D. (vice president of the Medical Society of Delaware): Good afternoon, ladies and gentlemen.

I have the privilege of introducing Dr. E. M. Bluestone, Consultant to the Montefiore Hospital in New York, Professor of Public Administration in New York University and Assistant Professor of Hospital Administration in Columbia University. Dr. Bluestone will speak on "Planning for Prolonged Illness." Dr. Bluestone.

Dr. E. M. Bluestone: My friends, I am glad to be back in Wilmington.

Let me explain at the outset that I came naturally by the profession of medicine. I inherited it from my father and was brought up to appreciate the exigencies of medical practice. I am going to tell you something that I never told an audience before. One of the reasons why I went into hospital administration in 1920 was that I wanted to contribute something to the advancement of the work of the general practitioner. I knew that he was in a depressed state in those days, for a variety of reasons with which I know you are familiar. But I felt that there was much to be done to elevate and invigorate that state, and I thought I would try my hand at it. I had my first opportunity when the distinguished Dr. S. S. Goldwater, who was the father of hospital administration in this country, asked me to become his associate at the Mount Sinai Hospital in New York. I never had occasion to regret it.

I realize perfectly well that there is an unreasonable gulf between the clinician and the administrator. One does not often find a happy association between the two, and the more's the pity because, if the administrator of the institution is medically-minded and can speak the doctor's language, much can be attained by way of co-operation and collaboration.

I am speaking to you this afternoon, therefore, as one of you, and I want to tell you that I am a strong devotee of the voluntary principle in medical practice. I don't want to be misunderstood on this score because of anything that I say to you this afternoon. I abhor compulsory medicine. Almost everything that I have done —those things for which I have been personally responsible in the advancement of medical organization—has been based on the voluntary principle. The rest is not up to me nor to the profession of hospital administration. The rest is up to the practice of medicine, to the practitioners of medicine, and I hope that they will come up with some of the answers.

Let me begin, since my subject is "Prolonged Illness," by telling you that I dislike the expression "chronic disease," or "chronic illness." It was the original designation for a patient who was hopelessly sick, incurable. There is something about the expression that is discouraging to the practitioner, the social worker and the nurse. The word comes from the Greek "chronos" meaning time, as if the patient were serving time, or there were something forbidding about his condition. There were certain connotations that went with the expression that I didn't like and I felt that the practitioner of medicine should be the first to want to seek a happier term, a term which would have a little more encouragement in it, with connotations of curability, better prognosis and less discouragement.

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*Presented at the Annual Meeting of the Medical Society of Delaware, October, 1958. Du Pont Country Club.

**Consultant to the Montifiore Hospital, N. Y. and Assistant Professor of Hospital Administration, Columbia University College of Physicians and Surgeons, N. Y.

So, I began to popularize the expression "long-term illness:" But there was something about "long-term illness" which I preferred not to think of, such as incarceration. It was a borrowed term. And then came the expression which I have been using ever since, "prolonged illness," illness which is longer than "acute" illness. It is a little kinder; there is more encouragement in it. We must think in terms of prognosis as we organize for medical care and, if we are going to think of prognosis, we want a term that will not discourage us. I shall therefore speak this afternoon about *prolonged illness* in relation to medical organization.

The Institutional Way

There are many ways of taking care of a patient suffering from prolonged illness and one of them is the institutional way—a general hospital, a hospital for chronic diseases, a home for the aged, a county hospital. But there is something about the institution that I don't like because, even under the best of circumstances, an institution is a necessary evil. In a perfect society there is no need for an institution; the individual is integrated with his family. He is part of his environment. He is treated in the location where he becomes sick, and in the environment in which his illness was incubated. I am not trying to tell you that a hospital is not a necessity. Of course it is. But it represents a choice of evils. When a surgeon operates and scars the human body, he is, after all, selecting the lesser of two or more evils.

In the competitive world in which we live we are constantly confronted with alternatives. We are not often confronted with alternatives of the best; it usually is a choice as to which will hurt least, unfortunately. And so, we have institutions.

Then we ask ourselves, "Why do patients go to institutions — to hospitals, for example?" There are a number of reasons why they go. But before we analyze these reasons I want to remind you that physicians of our generation prefer "acute" medicine, or "short-term" medicine. Such a patient is in severe pain; he is bleeding; he is in shock; he is unconscious, or he has a high fever. The tendency of the doctor is to move in the direction of such a patient and at least tide him over his acute symptoms. There comes a time, however, when these acute symptoms subside; they are dulled. In some instances the patient is completely cured. In other instances he is only relieved of his signs and symptoms. In still other instances the illness moves from the acute stage into the so-called chronic stage. He remains more or less sick for a comparatively long period of time.

I can still recall my teachers going into the wards and selecting those patients who were acutely sick, or interesting to them, and passing over those who were not acutely sick or interesting. The best of them passed by certain beds and gave the impression that since they couldn't do any more for those patients, there was no point in spending time with them What was the use of their occupying a bed under such circumstances? I hope that this reaction to prolonged illness was due to the fact that, in those days, we did not have the tools and other facilities which we have today. We now have many wonderful things in our armamentarium with which to help the patient that we didn't have in earlier days. And so, as I look back, I tend to excuse those men, though I find it difficult to do so today. For one thing, the rewards of continued interest are better understood and more appreciated today than they were then.

What happened then and what is happening today? A patient came into the hospital who was acutely sick; if he was not cured in a short time, and if his illness became prolonged, he was transferred prematurely to a hospital for chronic diseases, usually a Government institution, away from the acute general hospital. The tendency to transfer him at a time when he might need medical care most, because he was suffering from a difficult and complicated condition, was unfortunate and even tragic. There was a cleavage between acute illness and prolonged illness which did the patient much harm.

Often The Forgotten Man

One of several things happen when a medically-stubborn patient is transferred elsewhere in mid-stream. We forget about him today, just as they forgot about him in those days, by sending him away, rusticating him, alienating him, segregating him, at a distance from the prime facilities of which the general hospital alone disposes. But one of the reasons for transfer is that the patient ceases to contribute financially, and hospitals naturally prefer patients who can continue naturally toward their care. Voluntary hospitals cannot survive on good deeds alone; they have to have income. Income, as you know, comes from patients, from philanthropy, from government sources and, when the patient's contribution is reduced or disappears because of prolonged illness, the tendency is to send him to a county institution or chronic disease hospital.

There is a second reason for premature transfer to which I alluded a moment ago. The medical staff loses interest in the patient. Remedies had been tried, unsuccessfully. Instead of trying to find somebody who might do better, or organize a group attack, or put the laboratories to work, they decide that the patient must be transferred elsewhere. And the patient is transferred into lesser hands where he vegetates the rest of his life away. I used to refer to this as "the dumping process," by which the acute general hospital transfers its uninteresting and unwanted cases to a chronic disease hospital.

Reasons Not Valid

There is a third reason, and on this subject the administrator of the hospital and board of trustees are far more vocal. This is the one that you generally hear: "We cannot fill beds in a general hospital with slow-moving patients. We cannot permit beds to be occupied by patients suffering from prolonged illness because, for every patient with prolonged illness who occupies a bed, four, or six, or twenty, or thirty and even more patients who are acutely ill could use that one bed."

Now, let us take a close look at these three reasons. They are universal, and there is a semblance of logic to them. But, on careful analysis they are not valid. I said before that there are three sources of income for the hospital—the patient; philanthropy; and goverment on any of its levels. These three, individually or combined, finance the care of a sick man in a hospital. And I ask a question here: What difference does it make money-wise whether he is acutely ill or chronically ill? Only that he may have to be subsidized for a longer period of time. The patient suffering from prolonged illness is the man who has, in many instances, spent whatever he had on private doctors and hospitals. Then the time comes, somewhere during the course of his prolonged illness, when he doesn't have any more to contribute. When this happens, we are in exactly the same position as we are in the acute general hospital when an acutely sick patient is poor and hasn't any money to contribute. In other words, philanthropy and/or government must come in and help. So this argument is not valid enough for premature transfer.

To send the patient away only because he cannot contribute any more to his upkeep in the general hospital is wrong because if he no longer has the wherewithal to maintain himself in the general hospital, philanthropy should come in with its subsidy. If the two—his contribution and the philanthropic contribution—are insufficient, government must step in if only because there is no other source to which we can appeal. If the patient is a complete pauper, and has been forsaken by philanthropy, government must step in. You and I know that there are two things which will keep us away from government medicine; one of them is the ability of the individual himself to pay more, either directly or through health insurance of some kind; and the other is the willingness and ability of philanthropy to help out. But, if these two fail, you and I cannot complain if government takes over to the point of socialized medicine.

It is therefore up to us as physicians, as well as administrators, to find a way by which the patient can somehow, preferably by an insurance scheme, finance himself. I think we should get more help from philanthropy than we have been getting, although it has been doing pretty well in this country. You know what happened in England when philanthropy stepped out of the picture almost completely.

The Doctor's Reason

So much for the financial reason governing transfer. Let us now consider the question of the doctor's interest as a reason. In the case of prolonged illness, doctors tend naturally to shy away from the patient, and I have seen this happen to the best of them. If a man cannot cure his patient, his tendency is to walk away from him, and that is the last thing a man of science should do. You never saw a scientist working in a laboratory with an unsolved problem do such a thing. The problem remains a challenge. You would say to me then, "What would you do about it?" My answer to you is that a doctor's interest can be encouraged and stimulated. For one thing, you can purchase a doctor's time. The doctor has to make a living and, if he is going to give time to the hospital, he should be paid for it. I don't believe, for example, in free dispensary service, free out-patient service. I think the doctor is entitled to be paid for what he does. Then again, you must look for the type of physician who has clinical imagination, initiative, ability to investigate, a man who has a critical mind, to see if he can improve on what we have been doing and try to remove the cause for the prolongation of illness. In other words, the doctor should be given laboratory space or laboratory assistance and an opportunity to play with new ideas. He should be financed in the process, if necessary. There should be more classrooms available in hospitals so that men can teach and, in the teaching process, try and elaborate new methods of treating patients suffering from prolonged illness.

The administration of the hospital is vocal on the third reason for transfer: "We need the bed for an acutely sick patient and we cannot have it occupied endlessly by any one patient." If you ask what the answer here is, I would say that it is simple. You have to provide beds for all patients. What we are doing now, and what we have been doing over the years, is to transfer the patient to second-rate institutions at a distance from the prime facilities of the general hospital. In other words, we create beds elsewhere, and they are not productive beds. The idea behind them is not medically constructive. *Instead of having one bed in the acute general hospital and one bed in the chronic hospital (so-called), we should have two beds in the general hospital.* The patient suffering from prolonged illness should not be transferred to lesser hands at a time when he needs medical care most. He should be kept before the eyes of the doctor, for only in that way will new remedies be elaborated.

Unite In One Hosptial

What I am pleading for is that the two, the "acute" and the "chronic," be united in one hospital location, that of the general hospital. You can separate them physicaly, if you wish, as we are doing now in accordance with urgency in the new "progressive hospital care" idea. If we are to accept this idea in hospitals, then certainly we have no right to transfer a patient suffering from prolonged illness anywhere else. It is less expensive to deal with this problem on an integrated basis because the facilities are available, everything is available, and it doesn't have to be duplicated expensively elsewhere. In most instances it is not duplicated in practice, because you know as well as I do that, in the so-called chronic disease hospitals, we don't have the staff, equipment or laboratories to deal with them.

A patient who is admitted to the hospital should come there for one of several reasons. We spoke before of acuteness. A patient might need a surgical operation. To be sure, you can do a major operation in the patient's home, but you shouldn't. The place for such a patient is the hospital where everything is highly developed and centralized. Group-medicine is practiced in the hospital. You have laboratories, operating rooms, and everything else there. The patient might come to the hospital because of his need for heavy equipment which cannot be brought to him—radiotherapy, for example; the various modalities of physical medicine, which he might require for limited periods of time. Or, he might have to come to the hospital for a highly concentrated period of observation by specialists. That would be another valid excuse for hospitalization. But, *poverty in itself is no excuse for hospitalization.* Poverty is a social disease, not a medical disease. It depends on the medical requirements of the patient whether he is to come into the general hospital or not, and for how long. I have often said that *the incident of hospitalization should never be a matter of choice for either the patient or his family physician; it should be a matter of necessity.*. He must go there because there is nothing else that he can do. If there is a choice, I would avoid the hospital and keep the patient in his own home.

The point here is that there must be a logical reason for admitting a patient to a hospital bed and, *if he needs that bed it is the best thing for him.* On the other hand, *if he doesn't need the bed, it can be the worst thing for him.*

Medical Discoveries Often Made On "Incurables"

I want to remind you here, and I consider this a telling point, that the great inventions and discoveries in medicine in our time, whether you are thinking of the antibiotics or the advances in surgery, chemotherapy or anything else, were made by men working in the laboratories, or in the wards considered as laboratories, on "incurable" patients. You know the tendency to associate chronic disease with incurability, and give it a fatal prognosis. But it is from these patients that we are going to achieve remedies for the rest of time. It is because certain gifted and blessed physicians stick to the problem and forever seek new things among incurable patients that we are able to deal with the curable ones. The incurable patient today may very well be the curable patient of tomorrow.

The care of a patient, whether it is in the hospital, the patient's home, the doctor's office, or the out-patient department of a hospital, anywhere, must be comprehensive and continuous. We, as physicians, owe it to ourselves as men of science not to lose interest in a patient at critical moments for him. But, if there is a stronger horse available to carry the patient over in midstream, perhaps he should be harnessed and put to work if it can be done safely. If one surgeon declares a patient inoperable, it is just barely possible that another might find the same patient operable. It has happened! In a hospital which I directed for a great many years, we published quite a few articles on the subject in which we exhibited a series of cases which had been declared inoperable elsewhere, and found operable or with us could be dealt with otherwise, the patients living for years afterwards. It is the "never-say-die" attitude that we must adopt. We should never accept a prognosis of incurability. There is something profitable medically about sticking to a job until it is completed. If the patient is kept before our eyes, we are more likely to retain our interest in him than if he is sent off at a forbidding distance.

I am often told that, if we were to keep the so-called "acute" and "chronic" patients together in one general hospital, (and where do you draw the line?), the doctor's tendency would be to select the acute and neglect the chronic during rounds. So I ask, when are you more likely to get neglect —when the "acute" and "chronic" are taken care of in one institution, sharing the same facilities, or when they are separated? *Separation of the "chronic" patient,* his rustication elsewhere, *is an invitation to neglect.*. I grant that the doctor will (still being human) seek out those patients who interest him. But at least he will have the patients near him. He will look in occasionally, or arrange for someone else to look in. It is important—I need not tell you this because you know it better than I do—that, if a doctor cannot deal with a specific clinical problem himself, he is honor-bound to call in someone who might. That is the basis of the specialist's work. The general practitioner calls in a specialist when he finds a situation which requires superior help. There is always the obligation to call in someone who might do better, the obligation to share responsibility. This is the basis of the group practice of medicine. That is why we see more groups these days in comparison with the solo practice of medicine.

I remind you here of what I told you in my opening sentences that, when I say these things, please do not get the impression that I am talking socialized medicine. We have proved by experiment that group medicine is possible on a voluntary basis, and it is certainly more successful than the the compulsory form. In these days of great medical discovery and invention, there is no more excuse for the disregard, or neglect, of a patient suffering from prolonged illness, however much there may have been during the days when I was in medical school 45 years ago. I sometimes think that we were almost primitive in those days and, when I look back on some of the things I learned, I wonder! But what interested me most was the attitude of the medical profession toward sick people who were challenging their interest over a period of time. I have heard it said that "the profession of arms is the noblest profession on earth." But this is not true. The profession of medicine is still the noblest profession of them all. Among the learned professions it is still among the first. That is why I feel we have a greater obligation than we have accepted till now, to seek out remedies for those of our clientele who may try our patience, who may represent a challenge to our scientific interests. We cannot give the financial excuse any more, because money is available, and there always will be, to take care of people who are sick. I repeat that we must treat the physician as the man of science that he is and help him in his work. We must keep hospital beds together in one location and not separate them.

Time And Distance

Completeness, comprehensiveness, and continuity are vital in medical care. There are two elements in medical practice which must be taken into account. These two elements are Time and Distance. I need not tell any man who practices medicine what a powerful ingredient time is in diagnosis and therapy. When a patient is kept waiting for an x-ray or laboratory examination, or because the doctor is out playing golf, he may very well pass over the dividing line between curability and incurability, between life and death. The element of time is expressed in many ways, and I know that you are aware of them. For example, the difference between acute and chronic is a question of time. Duration of illness is a question of time; and duration should never be a criterion for the admission or retention of a patient in a hospital. It should never be a question as to how long the patient is going to be sick. The question should be: does he need the highly concentrated facility known as the modern hospital, where everything has been assembled for his benefit? If he needs it he should get it whether he needs it for a day, a week, a month, a year or longer. But if he doesn't need it, he shouldn't be there.

The same may be said about distance. When you separate the acute from the chronic, that is distance. When the doctor's office is miles away from the hospital and it takes him a long time to get there, that, too, is distance. Within the hospital you may have too great a distance in various ways—the nurses' station from the patient's bed, and so on. So, time and distance are important ingredients in organizing medical care. We must not, under any circumstances, relax our vigilance when we are dealing with sick people.

Individualization Of Care

I know that I have been talking longer than I should, and I have a way of rambling on forever on a vital subject like this, but I do want to close with these remarks. I think that the profession of medicine must consider three things (besides the factors of time, distance, and so on.) In the first place, we must have *individualization of care.*. We must never place a patient in a minority. And you know how often that is done in the hospital. Each patient is a world unto himself. It is of no interest to him that the patient in the next bed is more sick or less sick than he is. He has the right to the individual attention of his doctor. In the second place, I think that we as practitioners of medicine, have to help *break down the barriers between "acute" and "chronic" and treat patients continuously in accordance with their needs at the moment.*

The Hospital And The Practitioner

In the third place, I think that the time has come when *the hospital with all its wonderful facilities should share these facilities with the practitioner.*. I am unhappy about the thought that there are so many practitioners of medicine who are outsiders as far as the hospital is concerned. I think the time has come when the hospital must invite them in. The hospital must help the practitioner to solve the problem in the home of the patient, by subsidy if necessary, in those cases where it is not absolutely necessary for the patient to go to the hospital. Anything that can be brought to the sick man on two feet or on wheels, should be brought to him. And, where you have an intramural program and an integrated extramural program on a continuing basis under hospital auspices, you are more likely to get the best results in the care of a patient.

I want to conclude by saying that *the interest of the physician in the patient suffering from prolonged illness is the acid test of his character.*

Thank you.

..Dr. Layton: Dr. Bluestone, thank you very much for a most interesting talk. This subject is an interesting one, and Dr. Bluestone to me has brought out many questions.

First of all, the gulf between the administrator and the physician is one, I feel, that is simply solved, not by MacEachern's book, which would be thrown out the window, but by just one little phrase, "What can I do to help the patient?" We have seen a few hospital administrators, and never at any time has the hospital administrator said, "What can I do to help the patient?" The finances are such today that hospital care is really in many cases, a hardship. Whether we have full payment plans or buffer plans or other types of insurance plans, we get down to where we run out of money, and I think if we all work toward one common goal of continuous medical care of the patient, it would be a big step.

It seems to me every general hospital should be—I hate the word "chronic," too —shall we say, convalescent or prolonged?

Dr. Bluestone: No.

Dr. Layton: Not convalescent in a sense with some patients, but with the prolonged patient or prolonged illness. Also associated with that hospital should be rehabilitation. Funds are available, and they must be used and they must be matched in this particular state. I think the treatment of the prolonged illness patient is a real challenge, and it takes a good doctor to put out the neon sign in front of his eyes and not just flash the dollar sign. I think if you put that out and get to work on your patient, you really can help the vast majority of them. To be deserted with the idea on your mind, in your own little world, that you are incurable or you have been forgotten, is disastrous.

Are there any questions? Would you like to ask Dr. Bluestone any questions?

DR. BLUESTONE: I would like to comment on your remarks, Mr. Chairman, if I may.

Having been a hospital executive for 30 years, until I gave it up eight years ago for somewhat broader pastures, I know that if he is conscientious, the administrator has a moral as well as legal obligation to select the best doctors in the community to take over the various specialties in the hospital. In the university hospitals we know that the professor of medicine is the chief of medicine; the professor of surgery is the chief of surgery, and so on. In other hospitals, however, each chief of service should be considered as the professor in that hospital, and the administrator is under obligation, with the backing of his board and the help of the medical staff, to go into the community and pick out the very best to deal with the situation.

Those staff doctors should be available not only to patients inside the hospital, but also to the family physician outside when the patient can be taken care of at home. I want the hospital to move toward the patient and the practitioner. I say that it is wrong to graduate a man in medicine, cut him off from the hospital, and expect him to do general practice for the rest of his life, depending on him at least to read medical journals. In these situations the tendency is for him to practice the kind of medicine that he learned in his fourth year in medical school, if he can remember it that long!

But, where he is exposed to hospital medicine (under a home care program) even if he is not an insider—if he can call upon the hospital to help him solve the problem in the patient's home—this help should be offered to him.

Convalescense

Please let me say a word on the subject of convalescence. Unfortunately the word "convalescent" is badly confused with "prolonged illness. A convalescent patient is a patient who is safely on the road to partial or complete recovery, after having been acutely ill or chronically ill. He is convalescing. He needs the sort of thing you and I need when we are overworked and go off on a holiday. But the patient who is suffering from prolonged illness is still sick; he is not convalescent. You can represent acute illness by a sharp peak. It is acute. Prolonged illness would be a peak and then a plateau. Convalescence comes down from the peak in an acute illness and, as the line continues down and the patient gets better, you provide convalescent care.

It is wrong to use the word "convalescent" as a euphemism for "chronic disease," which it isn't. In our confusion we find that, in most institutions for the care of convalescent patients in this country, aged people and chronic patients, and all kinds of so-called incurables, and some mild mental patients too, are congregated. This is not convalescence, and I think that we ought to keep our definitions straight.

I hope the time will come when "acute" and "chronic" will coalesce, will merge as a continuing problem in humanity and science. This means that the convalescent patient naturally will come in for his share of our attention. And much of it will be given in the patient's own home.

Now I would like to have some questions.

DR. CANNON: Dr. Bluestone, do you propose to put all the patients with prolonged illness in with our general hospitals or rather pilot groups for experimentation and study? I suspect that the number of such patients would be physically impossible to absorb in our general hospitals with their own problems of beds as they are.

The other question has to do with the acceptance of federal funds.

Dr. Bluestone: Shall we take one at a time?

Dr. Cannon: Let me ask them both or I may forget my question. Do you find hospitals accepting state funds and county funds for the care of the indigent with no element of control? As soon as you talk about federal funds, you get a rigidness on the part of boards of directors, "We can't accept federal funds," because of the implied control that they fear. I wonder if you could say something about that or how the fear can be overcome since the amount of funds available on a state, county or city level is so inadequate.

Dr. Bluestone: As to your first question, I shall try to rephrase it, and I think I can give you the answer. Your first question is, What is the optimum size of a hospital? Are there minima? Are there maxima? How large shall a hospital be? But, why should we single out the patient suffering from prolonged illness in the consideration of the size of a hospital? You have mental hospitals now that have 15,000 beds in these United States. You know as well as I do, that you cannot individualize care with anything like that number. I am for smaller units, and that is why I came up with the idea of Home Care, the idea being to treat the patient as if his home were a hospital of his own, that is, his hospital world. A patient who is taken care of in his own home has the illusion that the hospital exists for him alone. He doesn't see the other patients, as he does when he goes into the hospital. So that your question is really a question of size.

Consolidation In One Hospital

Instead of having one bed in the general hospital and one bed at a distance out in the country for the chronic patient, let's bring them all together in one area so that the same laboratories, record rooms and operating rooms can serve them; the same staff will see them without a break. You are not going to get a better staff than the general hospital possesses, to take care of a patient in an independent chronic hospital! This has only happened once in the whole history of medicine. That hospital, Montefiore Hospital in New York City, is the living proof that independence is not the way to do it. In the end, it must take in "acute" patients too and treat them continuously.

You cannot predict proportions accurately and say that we are going to plan to have 25 or 30 or 50 per cent "acute" patients and the rest "chronic"—you must establish the principle that you will not admit any sick man to a hospital unless he absolutely needs such a bed. If he needs it, then the question of time, or duration of illness, has nothing to do with the case.

You can have a combined arrangement for a hundred, a thousand, ten thousand beds. I prefer the smaller units because they are more easily controlled.

Does that answer your first question?

Dr. Cannon: Yes.

Dr. Bluestone: Now, your second question. Doctors are sensitive not only on the subject of federal subsidy of funds; they are sensitive whenever you mention group practice or voluntary health insurance. They are sensitive, and I think quite naturally so, because they imagine that their living is involved. If you look into it deeply, however, this is a superficial reaction to the situation.

Home Care Program

Take, for example, the question of Home Care. The medical profession, i.e. the medical society, opposed it. Why? Because, they said, the hospital would be practicing medicine. But of course it won't be practicing medicine! The hospital is going to help the practitioner to take care of the patient in his home. We don't want the doctor to send the patient into the hospital unless it becomes absolutely necessary. In other words, we want to improve the doctor's living in this way!

I once did a hospital survey where the doctors had the cancer detection clinic closed. Why? Because they argued that the clinic practiced medicine by charging ten or fifteen dollars, giving patients a complete work-up—that the hospital was taking money out of the doctors' pockets, because these doctors should be taking care of these people. The answer is simple. In the first place, the doctor is not prepared with a group attack, whereas the cancer center is prepared. But, mark you, the cancer detection clinic is a case-finder for the doctor. While one or two patients out of a thousand were found to be suffering from cancer, almost half of the total were found to need a doctor, and back they went to the doctors' offices. As a matter of fact, if the doctor were in business, he would prefer such agencies as will find out what patients need their services and then refer them to their offices.

When I explained Home Care to the local county medical society, they went along with me, and now they bless us for it because we helped them solve the problem of the patient in his own home. After all, the backbone of medical practice is the practitioner. If he weren't there you would have to create him. When you speak of the doctor or the boards "freezing" when they hear the government may help finance the hospital, there is an element of logic in it, because in many instances government insists upon a say in the administration of the hospital when it contributes money. But that need not be the case. I will give you a concrete instance.

During my last year at Montefiore Hospital (I left there eight years ago or thereabouts) the City of New York, which is the local municipal government, contributed a million and a half dollars to our budgetary needs annually with never a hint of representation or interference. Nobody ever telephoned to me or asked me to do anything. We received that amount of money, or approximately that amount, for the care of public charges. So that you don't have to have government control as a result of government subsidy.

May I go on?

Dr. Layton: Dr. Bluestone, we are running a little behind time.

Dr. Bluestone: Well, I think you get the point, and if there is no further time, I can only thank you for your attention.

Dr. Layton: Thank *you* very much, Dr. Bluestone.

IT'S NOTHING NEW

A substantial part of the increased cost of medical service is due to new techniques in medical science. On this point H. L. Mencken says:

"Not a few of them call for expensive apparatus, and all of them call for kinds of skill that cannot be had for nothing. It is obviously far more costly to make a series of x-ray plates and cardiograms of the heart than it used to be to do the whole job with a stethoscope, or even the naked ear, as was the custom when I was young. A Wasserman may not cost as much as a permanent wave, but it at least costs more than no Wasserman. And it is plainly more expensive to cut out a gangrenous appendix and nurse the patient back to health than it used to be to give him a dose of Glauber's salts and send for a clergyman."

The above paragraphs appeared in the *Journal of the AMA* nearly 30 years ago. It simply proves that talk about the high cost of medical service is not new. It has been a perennial pastime for decades.

Reprinted from *Philadelphia Medicine,* September 16, 1960

FLUOROPHENOTHIAZINE — 238A*

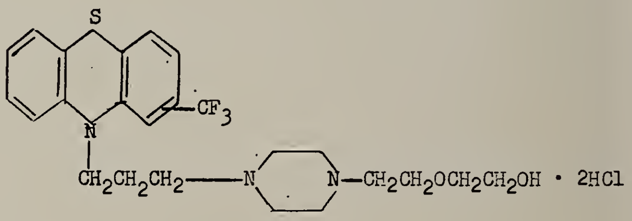
A NEW AND MORE POTENT NEUROLEPTIC AGENT

● **This new drug should soon find a place of value in the treatment of neuro-psychiatric disorders.**

In the area of phychiatry, the first half of the twentieth century has been devoted to the development of psychoanalytic theory and the drug therapy of mental and emotional illnesses.

A review of the literature seems to indicate that the greatest strides in drug therapy in psychiatry have been made with tranquilizers. It would seem that of these drugs, the phenothiazine group has been the most useful. Experimental and clinical uses of these drugs seem to indicate that they apparently have a specific effect on the psychotic process. However, it has been observed that they frequently produce severe side effects. We have seen a great number of these side effects, ranging from severe dermatoses including exfoliative types—to jaundice and "Parkinson-like" syndromes. The problem, therefore, resolves itself into finding a drug which will control the psychotic processes with either a minimum of side effects or side effects easily controlled.

A new phenothiazine derivative, Fluorophenothiazine hydrochloride, was made available to our group at the Philadelphia General Hospital for study. This compound has the following chemical structure: 2 - Tri-fluoromethyl-10-γ-(4-β,β^1-hydroxyethoxyethylpiperazin-1-yl) propylphenothiazine dihydrochloride.



The compound, designated as 238A, was supplied as 2.5 mg. scored tablets for oral use, and in sterile solution, each cc. containing one mg. of the drug, for intramuscular use. The acute toxicity of this

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*Supplied by the Medical Research Department—The National Drug Co., Philadelphia, Pa.

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JOSEPH ROBINSON**

EDWARD S. MCCABE, M.D.†

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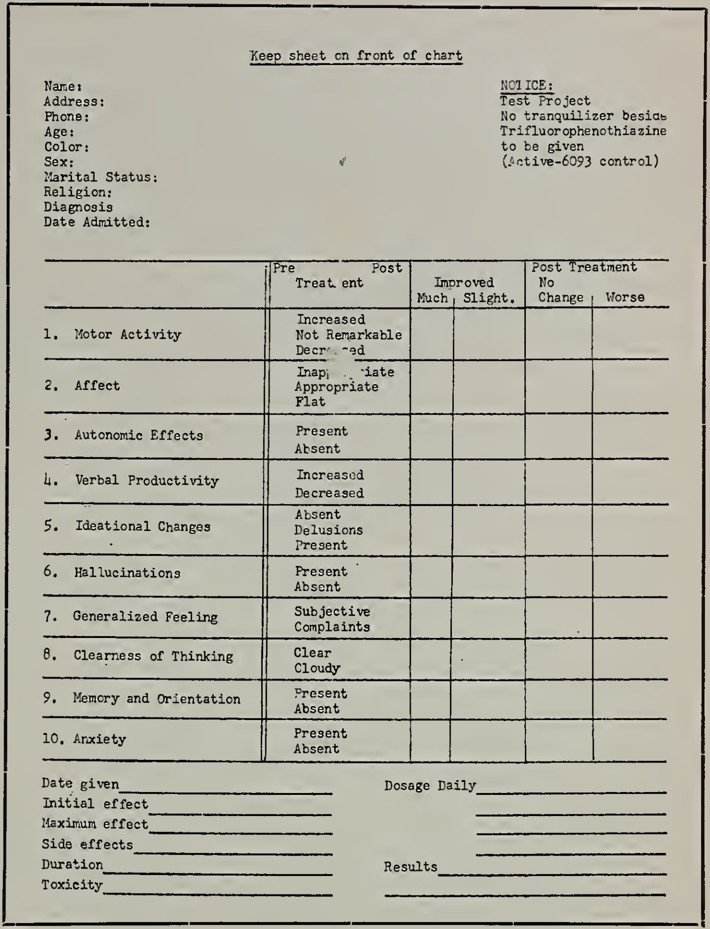

Keep sheet on front of chart

Name:
Address:
Phone:
Age:
Color:
Sex:
Marital Status:
Religion:
Diagnosis
Date Admitted:

NOTICE:
Test Project
No tranquilizer besides
Trifluorophenothiazine
to be given
(Active-6093 control)

	Pre Post Treatment	Improved Much	Improved Slight.	Post Treatment No Change	Post Treatment Worse
1. Motor Activity	Increased Not Remarkable Decreased				
2. Affect	Inappropriate Appropriate Flat				
3. Autonomic Effects	Present Absent				
4. Verbal Productivity	Increased Decreased				
5. Ideational Changes	Absent Delusions Present				
6. Hallucinations	Present Absent				
7. Generalized Feeling	Subjective Complaints				
8. Clearness of Thinking	Clear Cloudy				
9. Memory and Orientation	Present Absent				
10. Anxiety	Present Absent				

Date given____________
Initial effect____________
Maximum effect____________
Side effects____________
Duration____________
Toxicity____________

Dosage Daily____________

Results____________

compound seemed less than that for chlorpromazine, and the minimum effective dose was one-fifth that for chlorpromazine; thus there was a wide range of safety. Experimentally, it is ten times more potent than chlorpromazine in blocking a conditional response reaction. Compound 238A seems to have a direct action on basal ganglia and diencephalon with indirect action on the hypothalamus and reticular substance.

A pilot study was undertaken to determine the efficacy of the experimental drug 238A. We want to emphasize that this phase was a pilot study and no controls were used. This, of course, implies that the results were not definitive, but they did give us a good insight into the relative merits of this new tranquilizing drug. In addition, the pilot study allowed us a wide range in the selection of patients and in the dosage of the drug.

Methods And Materials

A group of ten in-patients—eight overactive agitated patients and two schizophrenics with catatonic excitement—was selected from the psychiatric service at the Philadelphia General Hospital. If a patient was receiving a tranquilizing drug, it was discontinued and no drug therapy was given for at least one week before starting the use of 238A. If, however, a patient was not receiving medication, the drug was administered at once.

At the start of the study, each patient was given a routine physical examination as well as a complete blood count and urinalysis. Laboratory tests were done periodically during the course of this study. A psychiatric evaluation was made at the start of the study and also at the conculsion. The in-patients were seen daily by the psychiatric resident to note any changes in the psychiatric picture during the course of treatment.

Each patient was given one cc. (1.0mg.) of 238A intramuscularly three times daily.

This dose schedule seemed to produce a moderate "Parkinson-like" picture within three to ten days. When this clinical response was achieved, the patients were taken off the injectable form and placed on a dosage of one 2.5 mg. tablet, orally, once or twice daily. In some cases an anti-Parkinson drug had to be employed.

Evaluation of each patient was achieved by means of a rating scale. Each patient was rated as slight improvement, good improvement, no change, or worse. Improvement was determined in terms of the following signs and symptoms: (1) motor activity; (2) affect; (3) autonomic effects; (4) verbal productions; (5) ideational changes; (6) presence or absence of hallucinations; (7) general effects; (8) clearness of thinking; (9) memory and orientation; (10) anxiety. A sample of the rating scale is presented. (See top of page 389.)

Second Study Group

A group of 18 out-patients was selected for the second phase of our study. The age range of this group was from 21 years to 70 years with an average of about 35 years. There were 10 females and 8 males. Four were single, 9 were married, 4 were widowed and one was divorced. Clinically, the group consisted of 16 psychoneurotics of various types and two were schizophrenics. Duration of treatment and observation ranged from 2 weeks to 24 weeks with an average of 11 weeks. The same scale was used as described for the in-patient group.

Each member of the out-patient group received a complete physical examination and laboratory studies were made at the start of the study. A complete psychiatric evaluation was also made at this time.

The dosage of 238A was varied from one 2.5 mg. tablet three times daily to one 2.5 mg. tablet daily, with an average of one tablet twice daily. Whenever necessary, the dose of the medication was adjusted on a weekly basis. Laboratory studies were repeated when the patient completed his trial period of therapy. It was not felt necessary to do any interim laboratory studies inasmuch as there were no severe complaints by the patients to indicate such a procedure. The patients were seen on weekly visits at which time they were evaluated by a different member of our team.

Obviously, the treatment of out-patients is a more difficult task than the treatment of hospitalized patients. The physician must rely on the patient to take the medication according to schedule and the observation of the patient occurs only once a week in contrast to the observation of in-patients on an almost daily basis.

Results

The therapeutic response of the 18 out-patients to 238A was as follows: good improvement was obtained in 13 patients; slight improvement in one patient; and no change in 4 patients. None of the patients were made worse by the treatment. Of the 4 patients who showed no change in their clinical picture, 2 patients were hospitalized and were given 238A by intramuscular injection as described above. These two patients manifested a good therapeutic response and were discharged from the hospital and treated on an out-patient basis.

The development of akathisia* was marked in the neurotic group of patients which often frightened them so that they became reluctant to continue the treatment. However, with some reassurance, we were able to overcome this apprehension in most of the cases. The marked akathisia served as a sort of warning of the possibility of the development of a "Parkinson-like" syndrome. At this point a decision had to be made whether to decrease the dose of the drug or to push the dose even further in order to enhance the onset of a "Parkinson-like" syndrome in order to achieve a desirable therapeutic response.

One of us (E.S.M.) used 238A in six private patients to treat psychosomatic diseases of the gastrointestinal tract. The patients were given one 2.5 mg. tablet of 238A daily for three weeks. It was felt that five of these six patients showed a good response to the drug in conjunction with a bland diet and some psychotherapy. One

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*Akathisia: A psychosis marked by morbid fear of sitting down and resulting inability to do so.

TABLE I

Age	Sex	Martial Status	Diagnosis	Dose 2.5 mg. Tablets	Duration	Improvement	Side Effects
33	F	S	Psychoneurosis	1 TID	10 wks.	Good	None
42	M	M	Somatization Reaction	1 TID	6 wks.	Good	None
46	M	M	Agitated, depressed	1 TID	20 wks.	Slight	Drowsiness
26	M	M	Paranoid schizophrenia	1 TID	4 wks.	Relapsed: Hospitalized	Parkinson
39	F	W	Somatization Reaction	1 TID	12 wks.	Good	None
36	M	M	Psychoneurosis with Conversion Symptoms	1 TID	5 wks.	No Change	None
46	M	M	Psychoneurosis with Alcoholism	1 BID & TID	14 wks.	Good	None
46	F	S	Schizophrenia	1 BID & TID	2 wks.	No Change	None
30	M	W	Psychoneurosis with Alcoholic History	1 TID	4 wks.	Good	None
70	F	W	Psychoneurosis	1 BID	12 wks.	Good	None
24	F	S	Psychoneurosis	1 TID	12 wks.	Good	None
33	F	S	Psychoneurosis (anxiety)	1 TID	17 wks.	Good	None
40	F	W	Psychoneurosis (anxiety)	1 TID	6 wks.	Good	None
28	F	M	Anxiety Reaction	1 TID	22 wks.	Good	None
32	F	M	Anxiety Reaction	1 TID	8 wks.	Good	None
30	F	Sep	Psychoneurosis	1 TID	10 wks.	No Change	None
28	M	M	Obsessive compulsive	1 TID	12 wks.	Good	None
35	M	M	Traum. Neurosis	1 TID	12 wks.	Good	None

patient was not improved by this treatment.

Data concerning each patient and the therapeutic response as derived from the objective rating scale are given in Table I.

Discussion

DeLay[1] and Deniker[2] specified that an analeptic drug—a term which they introduced—should possess the following: (a) sedative action without narcotic effect; (b) specific effect on excitement, restlessness and aggressiveness; (c) specific action on subcortical symptoms manifested by vegetative and extra-pyramidal changes. Thus Rauwolfia and phenothiazine compounds fit very well into this concept. The effectiveness of a neuroleptic drug is in its capacity to alter, reduce or eliminate part of the symptoms. Thus, a neuroleptic agent is used to reduce hypermobility when abnormal initiative and increased affective tensions are present.

Considerable work has been done in investigating the basic formula of Promazine and the numerous phenothiazine derivatives. One may hypothesize about the effects of the various derivatives in terms of therapeutic effects. Promazine, for example, is the basic formula which, in large doses, may have a tendency to produce convulsions. An isopropyl side chain may produce an anti-histamine effect. A butyl side chain may have an anti-pruritic effect. A halide on the ring could increase liver and skin toxicity, while potentiating the neuroleptic and anti-emetic effects. Inclusion of a piperazine ring for the substituted amine may increase the potency of the drug with production of extra-pyramidal signs.

Goldman[3] considers Parkinsonism an end point in the titration of tri-fluoperazine against psychotic symptoms. The encephalitic type is produced, including, at times, oculogyric crisis. The most common finding is akathisia—defined as an irresistable urge to be in motion, especially at night. In a minor form it is a feeling of inner unrest, associated with pulling sensations in the legs. It is important to bear these phenomena in mind so that improper use of the plethora of the so-called tranquilizer drugs will not be made at a time when the dose needed to push a patient into an actual Parkinsonism becomes necessary to obtain a positive therapeutic result. It is also important that the physician does not become confused by these symptoms and err in making a diagnosis of encephalitis, meningitis or tetanus, when a patient has a susceptibility to the drug even when given in small doses.

Diagnostically, several categories can be selected in which Tri-fluorophenothiazine, 238A, can be expected to be helpful. These categories, in their degree of responsiveness are: (1) the psychoneuroses, especially of the anxiety type; (2) affective disorders; (3) acute and chronic brain syndromes. The drug seemed to have less effect in frank schizophrenic patients.

There is usually little disagreement among physicians as to whether or not a patient improves on a particular drug. There is, however, a wide variation of opinion as to the degree of improvement. Neuroleptics tend to alter brain function in various ways and, in so doing, produce dissimilar effects on personality function. Thus, it is important that each patient be treated as an individual in his own socio-economic environment.

Conclusions

Fluorophenothiazine 238A is a powerful neuroleptic agent with a minimum of side effects. It appears that its effectiveness can be titrated against the production of Parkinson effect. The neurotic patient, because of akathisia, is more difficult to handle; it seems that this phenomenon is apparent more frequently in the agitated neurotic individual. Akathisia is a sort of signal for the physician to either push the drug to produce a "Parkinson-like" effect, or to try to prevent the possibility of the development of the Parkinson syndrome by the use of a variety of anti-Parkinson agents.

The parenteral form of 238A is decidedly more effective than the oral form. One mg. of the parenteral form seemed to be equivalent to 2.5 mg. of the oral form. The drug can potentiate barbiturate action, therefore, it should be used cautiously. No toxicity was observed for the skin, hematopoetic system or the liver. There were no gastro-intestinal complaints.

Inasmuch as a wide spectrum of target symptoms is rendered amenable to treatment with this drug, it appears that 238A is a valuable adjunct in the treatment of a variety of mental disorders. Although the drug does not show any dramatic results in the treatment of the schizophrenic process, it is nevertheless a potent tranquilizer. In the parenteral form, its effect on a variety of neurotic symptoms was very gratifying. Compound 238A renders the patient more amenable to psychotherapy and rapid improvement is obtained with a minimum of side effects which are usually inherent in most of the other phenothiazine derivatives.

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GLYCERINE RESEARCH AWARDS

Nominations for the 1960 Glycerine Research Awards close on November 1, 1960. They may be made by the candidate himself or any third person on the official entry blank form mailed to: Glycerine Producers' Association, Awards Committee, 295 Madison Ave., New York 17.

PLANNING FOR SECURITY AND RETIREMENT*

● Family security and retirement at a selected age must be planned for early in a physician's career, or he will suddenly find that it is too late to attain his goal.

EDWARD W. HAGEMEYER**

THE PRESIDENT, (John B. Baker, president of the Medical Society of Delaware): The Society is fortunate in having some gentlemen who are experts in their fields.

This afternoon we have Mr. Edward Hagemeyer who is a vice president of the Farmers Bank of the State of Delaware; Mr. Endsley Fairman, Vice President and Trust Officer and Director of Estate Settlement Division, Wilmington Trust Company, and Dr. Hewitt Smith, Mayor of Harrington, hobbyist in financial affairs.

Dr. Smith will take care of the discussion and we will ask Mr. Hagemeyer to start the program.

MR. EDWARD HAGEMEYER: Thank you, Dr. Baker.

There are many similarities between our professions but there are certain dissimilarities which make it necessary for me to go to a doctor when I have a medical problem and for you to go to a specialist in finances when you have a financial problem. I hope you appreciate that difference.

We both operate in a highly specialized field. No more than you could make an expert medical practitioner out of me can I hope to make an expert investment man out of you today. That doesn't mean, however, that with proper planning and thought given to the problem you can't make a great deal of progress in attaining family security and retirement at such age as you select.

There are many "if's, and's and whereases" involved, but the most important factor is that you set a goal, you determine what your objectives are, and start planning toward them quickly. If you wait until too late, you may find that it is just that; too late to attain the goal.

In the field of investment the biggest mistake is a failure to do an adequate job of planning, to realize the importance of sitting down and thinking out just what you are trying to accomplish. Just as you don't prescribe generally for everyone, so it is necessary in the investment field to work out a program that fits each individual's particular requirements.

There are all types of securities. They serve different purposes. And there is the question of life insurance, health and accident insurance, and investing in real estate. Not being a specialist in the field of insurance or real estate, I am not going to dwell on these areas. But they are definitely a part of many people's programs for retirement.

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*Presented at the Annual Meeting of the Medical Society of Delaware, October, 1958, Du Pont Country Club.

**Vice president, Farmers Bank of the State of Delaware.

What are the factors that we must consider in trying to work out an investment program? The first is, what is your present age and at what age do you plan to retire? Two, what resources are available to you, not only at present but in terms of present and future earning power? Three, what are your family responsibilities? Must you take care of them first before you plan on retirement? And last is the temperament of the person.

What are the elements from which we can compound our prescription? I mentioned life, health and accident insurance. Certainly, a young doctor starting in practice with a young family has the problem of what happens to his family if, while making his calls a truck hits him and he can't practice or, he is killed. What happens to his family? How do you provide against that possibility or protect your family? There is no way to provide against that possibility, unless you have inherited wealth, other than through the purchase of life insurance.

The second element is real estate. The first and most obvious example is the purchase of your own home and possibly your office. Other people, as they accumulate funds, invest in real estate for rental income. The third element is bonds; and the last, stocks.

I can't stand here and say, "This is what you should do when you are planning for future retirement." I can outline possibilities. I can't outline specifics without knowing more about your problem and the relative weights you have to assign to such things as your family responsibility and the problem of educating your children. But there are some things that we do have to think about.

Let us try to take some specific examples and analyze what the person might do under the assumed circumstances. For example, I mentioned before a young doctor starting practice. Let's assume that he has a young family, several children, probably more to come. Obviously, his first problem is providing for family security and the chances are he isn't thinking much about retirement at sixty-five. He probably is more concerned with the debts accumulated while he was getting through school and his internship and setting up his practice. So his first objective will be to try to acquire a certain amount of family security. We will assume that he does this through the purchase of insurance.

As the years go by he purchases his own home and decides he ought to have some funds in reserve to take care of unknown contingencies, money he can get in a hurry before he starts worrying about investing. I think that is a very important part of anyone's planning. You want some liquid funds to protect yourself against the necessity of selling other securities at what might prove to be an unfortunate time. Those funds don't have to lie idle; they can be put in a savings bank or where they are readily available at no sacrifice in terms of the price of liquidating.

We will assume that this young doctor has done all of those things. He figures he has quite a few years of practice before him, but he doesn't want to practice forever. He is looking forward now to full, or at least partial, retirement and the slowing up of his activities around 60 or 65. He had better start working toward that goal because he is going to have to put aside a portion of his income each year, over many years, to accumulate an estate in securities that will give him an adequate income on which to retire.

He can to some extent depend on his life insurance. If he lives his life insurance has cash value, and it may well be that his greatest need for family protection is when he is younger and has children he is putting through school. Whereas, after the children are married and have their own families, his responsibilities to his family are somewhat less. He has only his wife to be concerned about. But perhaps he doesn't need so much life insurance. Neverthless, during the years he has been buying it he has built up cash value in it.

When it comes to investing his money, what should he do? If he is inclined and has the time and the temperament to sit down and study finances, he may want to do it himself. My impression of most doctors and professional people, however, is that they are so busy in their own profession keeping up with changes that they have little time or inclination to spend time studying finances or the stock market. But it is dangerous to get advice from amateur sources.

I am sure you wouldn't think much of me if I went to my barber and asked what was good for a sore throat or continual headaches. But I know quite a few people who get tips on the stock market from their barber, the bootblack or other sources. These are based on hearsay, what they heard someone else say. That is not how you go about investing for the long term if you want any degree of assured success. There are good sources of information in terms of banks and professional investment advisors.

Many of the sources are not free. Sometimes the advice you get is worth what you pay for it and not much more. That is not always true, but it does pay to be careful. It is amazing the number of estates you go through and wonder why they were holding some securities. Many of them have no value. They represent dollars that were invested by someone, but you couldn't get anyone to give you ten cents for them. So, it is a field which is filled with perils for the unwary.

We talked about the young doctor. What about the fellow who has accumulated funds in a savings account or in savings bonds? He has a good income and suddenly starts worrying about inflation. He thinks, "this money I have in savings bonds I started twelve years ago, and it will buy about one-half to 60 per cent of what it would when I started. I better sell them and buy stocks." Is that necessarily the answer? It may or may not be for the particular person.

For example, he might decide, "Well, I want stocks that will pay me a good income and will gradually increase in value." But assume his income is high enough that he is paying a tax of 40 to 45 per cent to the State and Federal Governments. Is that necessarily the best answer for him? He is merely adding additional income to a high tax bracket and getting relatively little benefit from it. Would he not be better off, if he is planning for the future, and since we don't know what the future holds, to put some of his money in tax-free bonds and some of it in good growth stocks which might give him a low return now but which, on the basis of the management of the companies, lead him to believe that they will continue to grow as our economy grows? He does not add substantially to his current taxable income now. Might that not be a better answer to his problem? He will keep more of the dollars he gets if they are invested in tax-free securities. He will have provided for the future by buying in companies which will grow, whose earnings and dividends 10, 15 or 20 years from now may be substantially higher than they are today. You notice I said "may be." I am not making a definite forecast. But we do know from past experience in this country that as the nation grows, industry must grow, and that the progressive companies in those industries are going to grow, too.

Now, you say, "How do we choose these industries? How do we know which management to select?" I can't tell you in a few minutes how we do it, but I can tell you some of the factors which influence prices in both the bond and stock market.

Bonds pay you a fixed income. High grade bonds offer you security in the sense that they pay a fixed amount at maturity;

they pay a fixed amout of income each six months; and, generally speaking, over a period of years they will tend to fluctuate in value within a narrower range than common or preferred stocks.

Common stocks represent an equity in the business. They are not redeemable at any fixed value. You get your money from them by selling them in the market place at what someone else is willing to pay for them. Their prices are not determined by the level of interest rates but by a multitude of factors; by the company's earnings and dividends, by the industry within which it operates, by the type of management it has. They are influenced by one other factor which is largely unpredictable, the psychology of investors and the general public.

For example, at some times people may be willing to pay twenty times the earnings of a company and accept a yield of only 3 or 3½ per cent based on current dividends, because they are optimistic about the outlook for general business and particularly for that company. But, at other times, that same stock might be earning the same amount and paying the same dividend but people might be willing to pay only 15 times earnings. Perhaps the outlook for business is poor at the time. Perhaps there is fear of declining prices and not inflation. So stock prices will fluctuate not only on the basis of business conditions and the fortunes of the particular company but also on the basis of public attitudes.

We have seen a great deal of that within the past year. Actually, many companies today are earning less than they were a year ago, and quite a number have cut dividends. But whereas last fall there was great concern about the outlook for business, and we had a short wave of liquidation of stocks in October, today the reverse is true. There seems to be a mad scramble to acquire stocks, and there is much talk about the inevitability of inflation, the declining value of the dollar, and nobody wants bonds.

These things have happened before. History repeats itself, but unfortunately, never in an identical manner so that we can be sure of exactly what will happen. Moreover, when you read that stocks hit a new high, if you will look you will observe that not all stocks hit new highs. Everyday, if you will look at the Wall Street Journal, you will notice that so many stocks hit new highs and so many more hit new lows for the year. Our markets are, if anything, becoming more selective.

I trust I have not confused you too much. I have tried to point out that there are many pitfalls in trying to do the job yourself without an adequate understanding of all the problems involved.

I mentioned before mutual funds. Mutual funds are simply companies set up to pool the investment funds of a number of investors. They have advantages and disadvantages. They give the smaller investor or the person starting out an opportunity to diversify his investments, to put his funds in more than one basket, and to acquire professional management at what actually amounts to a nominal fee because the funds are managed by professional investors. Normally, the shares are purchased at a premium over market value or their asset value amounting to 7 or 8 per cent and are redeemable at their net asset value. There are more types of mutual funds than I can begin to describe. Some funds operate what they call a balanced fund. They hold both common stocks and bonds. Some specialize only in common stocks. Some attempt to concentrate in rapidly growing industries and are called, growth funds. There is one called a speculative stock fund. Others specialize in the securities of a particular industry, buying only the stocks of what they think are the best companies in that field such as the electronics field, the chemical industry, and so on.

They have advantages because when you buy the shares of a mutual fund you are not buying just DuPont or General Motors but generally an interest in a widely diversified list of securities.

One other advantage that the young man starting to build a retirement fund has, is that he is not putting all of his funds into the market at one time. It is possible to take advantage of fluctuations in the stock market. You don't get spectacular results, but if you invest in a selected group of common stocks at regular intervals over a period of years, the chances are you will acquire those stocks at a lower average price than you will if you put all of your funds in at one time unless you have been particularly astute in buying stocks at a low point in the market. The difficulty is that most people get enthusiastic about the stock market after it has been rising for some time and begin buying stocks. So they buy near the top. After the market has been going down a long time, they get discouraged, decide there is no hope and liquidate.

You may say, it is obvious nobody can make any money doing that, but it is amazing how often it has been done over the years. One way to protect yourself against it is to invest regular amounts periodically. Suppose you take a stock like General Motors, put $500 into it every six months and start when its is selling at fifty. You buy 10 shares. Next time it is selling at twenty-five. At twenty-five your $500 will buy 20 shares. So that the higher in price the stock goes the fewer shares you buy. The lower in price, the more shares you buy. Over a period of years you will have acquired the stock at a relatively good average price.

That does not mean you cannot have a loss. If you are forced to liquidate for some reason when the market is at a low point, obviously you will have a loss. My only suggestion is, you don't buy common stocks with funds that you are likely to need for an emergency. You don't put yourself in a position where you are going to be forced to liquidate. You buy stocks for long term investment only when you can afford to ignore day to day fluctuations. That is why I mentioned this question of temperament before. It seems to me it is an important factor because some people are constitutionally built so that they get upset at every little jiggle in the stock market. They get excited when it goes up five points and wish they had bought more.

But if it drops three points they also get upset and lose a night's sleep and start figuring, "I just lost $3,000 on my 1,000 shares." They don't lose it until they sell it. They don't make it either when it goes up until they sell it. But they have lost sight of their objective. They didn't invest to make money in a few months or a year. They bought that particular stock because they felt over a period of years it would provide a good income, it would continue to grow, so that they should not be concerned with day-to-day fluctuations. They should be more concerned with what happens to the company they have invested in. Has someone developed a new product that is likely to cut down on their sales or a better way of doing something?

I think I have raised enough questions for you to start the discussion.

Thank you.

Dr. Smith: Thank you, Mr. Hagemeyer. I agree wholeheartedly with everything that you have said. I think that first you stressed the fact that family security is the primary matter in a young husband's financial program. After treating financial security the ownership of a home should be the next investment. The next thing is to get a reserve either in the form of a checking account, government bonds or money in a savings bank.

I would like to ask you just how much do you think the average physician should keep in this so-called reserve, whether it is a checking account or whether it is in short term bonds? In terms of his monthly needs would he want to keep possibly six months for acceptable needs in an account like this and invest the rest? It obviously is foolish to have five or ten thousand dollars in a checking account.

Would he be wise to invest down to his foreseeable needs for the next six months.

Mr. Hagenmeyer: I would keep in the checking account the funds I needed for day to day operations, enough balance that the bank is not making a service charge every month, and I would put the rest of the six months' requirements in either a savings account or savings bonds. Right now short term government bonds give a good return, but six months ago a short term government bond gave a return of less than 1 per cent. They fluctuate widely with the actions of our monetary authorities. A savings bond gives a fixed return for the length of time you hold it and no risk at all of market fluctuations. It is redeemable at pre-determined levels.

You do not buy the savings bond as an investment. You use it primarily as a reserve fund. You can get better returns on other securities if you assume more risk in terms of market fluctuations. You have no risk in a savings bond or in a savings account.

Dr. Smith: Thank you. You mentioned growth stocks. Some financial writers will go so far as to say that growth stocks are the only medium by which a physician or other businessmen can provide for retirement. Will you name a few groups of stocks where growth stocks would be most apt to be found?

Mr. Hagemeyer: They will be found in industries which have the greatest prospects for growth. We are going through an era of revolutionary changes in both processes and products. Which industries provide the products or enable industry to adapt themselves to new ways? The chemical industry has certainly built an enviable reputation for the discovery of new products. The electronics industry is newer. It received its impetus during the war and some companies have shown rapid increases in sales. The business equipment industry, because the amount of paper work and clerks needed has grown tremendously, so that an opportunity to buy more advanced equipment that will enable them to get the job done more efficiently, has created a demand for new electronic equipment. The outstanding example is I.B.M. The trouble with growth stocks is that they are never cheap in relation to others. The chances are they never will be so long as they continue to maintain that rate of growth. The biggest factor is the quality of the management and the extent to which it has provided for future succession.

Dr. Smith: Would you include drug stocks in that category?

Mr. Hagemeyer: Yes. They have been and still are growth stocks. There are other factors involved. An industry can show rapid increases in sales but earnings do not always keep up with the growth. The drug industry has grown rapidly and developed new products, to such an extent, that competition became so keen that companies did not have a long period of high profit margin on a new product. Someone else came along with something else that was competing with it, and for a period the drug stocks went through a readjustment. People suddenly felt, "They don't grow the way we anticipated." Now they are coming back into popularity again. That is the nature of markets. It has happened to other industries.

Dr. Smith: You dwelt on mutual funds. We all know that mutual funds are in a class by themselves. They offer adequate diversification and specialized supervision, and I think they are good vehicles for the young man starting his investment program.. But I wonder when in the process of growth of a man's investments he should forsake the mutual funds and either study the market or study investments and do it himself, or else seek the advice of a competent investment officer.

Mr. Hagemeyer: I can't draw that line with any certainty. I think it will vary with the individual. If you are inclined to do the job yourself and have the time to do a little studying or reading, you take it up as a hobby instead of the camera. You can talk to your banker or other people who are in the field and perhaps get ideas and advice. I would say you might then branch out from the use of mutual funds much sooner.

Dr. Smith: Would it be around $15,000, total investment funds?

Mr. Hagemeyer: It could well be because you can't get enough diversification with a much smaller amount. I think sometimes talk of diversification is overdone. Many of our major companies are themselves well diversified and operate in many different fields. We talk of the DuPont Company as a chemical company, but its interests range far wider than just the chemical industry, which itself is a widely diversified field and serves many other industries. They are large textile manufacturers in synthetic fabrics, and are in the paint business. So, they are affected by the building industry and the automobile industry.

There are other companies, too, which are widely diversified in themselves and to that extent offer diversification. It would probably be possible to pick five major companies and pretty well cover most of the major industries in the country if you want diversification. But you can diversify too much. Diversification then becomes an excuse for not watching your investment. You figure, "I have plenty of time, I will buy a little of everything and trust to luck." Nothing very serious will happen to much of it but that is not investment management.

Dr. Smith: I gathered from your talk that you are a conservative advisor. Right now, fixed income securities, such as government bonds and preferred stocks, are more or less in the doghouse. Everyone knows they are the sheet anchor of an investment portfolio but would you give us an idea of what percentage of fixed income securities the average portfolio would contain, provided the rest of the common stocks were probably "B-plus" grade or better.

Mr. Hagemeyer: That is a large order for the average portfolio. I can tell you what it should have been ten years ago and it will vary with individual circumstances and inclinations. In many of our funds we have 50 per cent in common stocks. The balance, depending on the circumstances, may be in corporate bonds and preferred stocks. In another account the balance might be entirely in tax-free securities, where tax exemption is important. The extent to which you can afford to put your money in common stocks will depend on what kind of common stocks you buy. For example, when income becomes an object you probably would buy more of what are called defensive stocks like utility companies, food stocks and the industries which continue to do a stable volume of business, whether business is good or bad, and whose income is subject to relatively minor fluctuations. If you had a substantial portion of your funds in that type of stock, you would feel justified in holding a larger percentage of stocks because your income won't be as subject to wide fluctuation. It will vary with what your goal is.

I could not name an ideal figure without knowing the circumstances of the investor and what his present status is. Is he interested in getting a current return? Is he interested in building for the future?

Dr. Smith: In other words, each portfolio would have to be tailored to the individual's needs?

Mr. Hagemeyer: That is right.

Dr. Smith: I am going to ask one more question. Mr. Hagemeyer, if you were a physician and a young man came into your office and said, "Doctor, what do you think of retiring at 55 instead of 65 so that I will get about ten more years of fishing, hunting and traveling before I get too old?" What would you advise him if you were a physician—retirement at 55?

Mr. Hagemeyer: That would depend on the individual. If he wants to retire badly enough, he will work toward it. Some people may think this a good idea at 30 but not when 55 comes and they find themselves still active.

DISTRIBUTION OF SERUM CHOLESTEROL LEVELS

Among Normal Middle-Aged Men

● Most texts state that the serum cholesterol is normally 150 to 250 mg. per 100 ml., but study of 1,543 healthy, middle-aged males reveals a normal range of 164 to 323 mg. per 100 ml.

Sidney Pell, Ph.D.*
Walter B. Koniecki, M.T.**

In recent years there has been an increase in the number of serum cholesterol determinations made on healthy individuals because of the reported association of cholesterol to coronary heart disease. If the significance of a person's cholesterol level is to be evaluated properly, it is important that specifications of normal values in the United States population be based on up-to-date surveys of well-defined, representative population groups. It is also important that the size of the samples studied be large enough to estimate the desired parameters with sufficient reliability.

The normal range most frequently cited in texts and manuals on clinical laboratory procedures is approximately 150 to 250 mg. per 100 ml.[1-4] Sunderman and Boerner state: "As shown by composite studies of over 700 healthy subjects, *the average concentration of serum cholesterol is about 200 mg. per 100 ml.*" (italics theirs).[5] The studies cited in support of this normal range were done prior to 1950. Surveys undertaken more recently indicate that the normal range among adult males in this country is substantially higher.[6-10]

During the year, 1959, 1,593 serum cholesterol determinations were made on men from 40 through 64 years of age who are employed by the du Pont Company and reside in the Wilmington area. The levels were determined by the method of Pearson, Stern, and Mac Gavack.[11] Blood was drawn when the men were in the fasting state, usually between 8:00 a. m. and 8:30 a. m. The 50 men whose medical records revealed a history of coronary heart disease were exluded from this study, leaving 1,543 for analysis.

The frequency distribution of the levels obtained in this series is shown in Table 1[1] and on the chart. The mean, standard de-

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*Biostatistician, Medical Division, E. I. du Pont De Nemours & Co., Inc.

**Head of Clinical Laboratory, Du Pont Company, Wilmington.

[1] The clinical data appearing in this table, which is not published due to lack of space, is available on request by contacting the author.

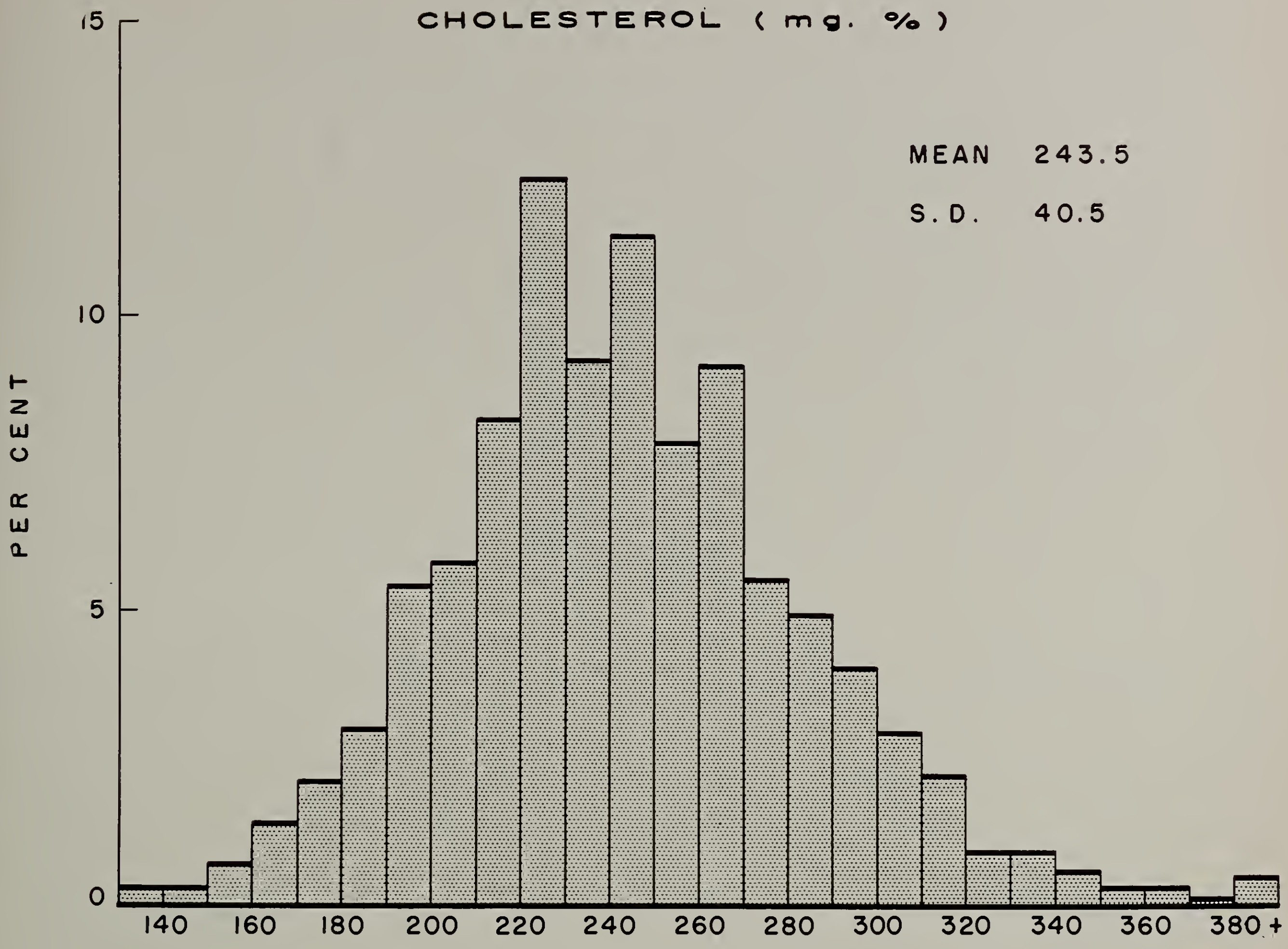

Table II

SELECTED POPULATION STUDIES OF SERUM CHOLESTEROL LEVELS IN ADULT MALES WITH NO CLINICAL CORONARY HEART DISEASE

Authors	Location	*Ethnic and Socioeconomic Characteristics*	*Age*	*No.*	*Mean Cholesterol*	*S.D.*
	Wilmington Del.	Clerical, sales professional and managerial personnel	40-64	1543	243.5	40.5
Adlersberg, D. et. al.[6]	New York City	Low-middle income industrial workers	38-67	295	240.5	48.2
Lawry, E. T. et. al.[7]	Various cities in U.S.	Mostly clerical workers, teachers and executives	40-64	1132	241.3	49.2
Lewis, L. A. et. al.[8]	Cleveland	Production workers, clerical workers and executives	40-64	774	242.0	. . .
”	Los Angeles	Production workers	40-64	634	263.3	. . .
”	Pittsburgh	Production workers, clerical workers and executives	40-64	915	240.3	. . .
”	Pittsburgh	Prisoners	40-59	326	215.8	. . .
”	Mass., Calif., New York	Varied employed personnel	40-64	1532	241.0	. . .
Epstein, F. H. et. al.[9]	New York City	Italian clothing workers	46-64	203	224.8	. . .
”	”	Jewish clothing workers	40-64	284	244.0	. . .

viation, and normal range, in mg. per 100 ml., are as follows:

Mean	243.5
S. D.	40.5
Normal range (95% confidence interval)	164.1 to 322.9

The mean cholesterol level in this group is about the same that has been found in large scale population studies done in recent years on other healthy adult males in the United States. A comparison of various population samples, representing a wide range of socio-economic categories, is presented in Table II. Of the ten groups shown in the table, the means of seven vary within the narrow range of 240.3 to 244.0. The mean of one group, production workers in Los Angeles, is significantly higher than the others; i.e., 263.3. Two groups that are unusually low are Italian clothing workers in New York City (224.8) and prisoners in Pittsburgh (215.8). Apart from these three divergent groups, which may differ from the others because of unique dietary patterns, the data in our series are in substantial agreement with other surveys, and are probably representative of healthy middle-aged men throughout the nation.

The normal range does not necessarily indicate a desirable range; it merely specifies the range of levels that are to be expected in the population from which the sample was drawn. Normal ranges of serum cholesterol vary greatly in different parts of the world. It is possible that the United States, which has the highest death rate in the world from coronary heart disease, has an unduly high prevalence of hypercholesteremia.

Summary

Serum cholesterol determinations were made on 1,543 healthy males from 40 through 64 years of age in the Wilmington area. The mean level was 243.5 mg. per 100 ml. and the standard deviation, 40.5 mg. per 100 ml. On the basis of these figures, the normal range is 164.1 to 322.9 mg. per 100 ml. These findings are in agreement with most other large scale surveys of healthy adult U. S. males undertaken in recent years.

ACKNOWLEDGEMENTS

The authors wish to acknowledge with thanks the assistance of the following persons: Mr. Klein O. Kenton, Miss Doris F. Edwards, Mrs. Edith C. Ames, Mrs. Sara M. Rodgers, and Miss Mary Louise Lynch.

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MEDICAL ASPECTS OF SPORTS

The Second National Conference on the Medical Aspects of Sports will be held in Washington, D.C., at the Statler Hotel on November 27, 1960, immediately preceding the annual Clinical Meeting of the American Medical Association. It will cover a wide range of subjects, including panels and discussions related to training and conditioning, preventon of injuries, recognition referral and treatment of injuries, the psychology of sports participation and other subjects. Those interested in receiving announcements should address The Secretary, Committee on the Medical Aspects of Sports, A.M.A., 535 North Dearborn, Chicago 10, Illinois.

Obituaries

COLONEL ROBERT H. DUENNER

1883 - 1960

Colonel Duenner, an Honorary Member of the Medical Society of Delaware, died in Walter Reed Army Hospital on June 12th. Colonel Duenner received his medical degree from George Washington University School of Medicine in 1910 and did graduate work in allergy at Cornell University. He entered the Army in 1912 and during World War I commanded a base hospital in France. He graduated from the Army War College in 1934. Following his discharge from the service in 1946, he became Director of Student Health at the University of Delaware where he remained until the onset of his recent illness.

Colonel Duenner was a founder of the Army-Navy Club in Washington and was a recipient of the Army Commendation Ribbon. His home was on Old Oak Road, Newark.

CHARLES H. BENNING, M.D.

1890 - 1960

Dr. Benning, a native of Brooklyn, died in Wilmington on August 2nd. He received his medical degree from McGill University, Montreal in 1917, and a master's degree in public health from Johns Hopkins.

Dr. Benning was a specialist in epidemiology, being certified by the American Board of Preventive Medicine and Public Health. He came to Wilmington in 1952 and was the health commissioner for seven years. Prior to coming to Wilmington he served with the U.S. Military Commission in Hesse, Germany. He had been director of health at Oak Ridge for the Atomic Energy Commission. He had been selected for training in public health by the Rockefeller Foundation while serving with the Michigan State Department of Health.

Dr. Benning was an associate member of the New Castle County Medical Society since 1954.

VINCENT deP. MAGUIRE, M.D.

1919 - 1960

Dr. Maguire, a native of Wilmington and a graduate of Archmere Academy, Mount St. Marys College, and the University of Pennsylvania School of Medicine in 1943, died in Wilmington on May 20th. After internship at the Delaware Hospital, Dr. Maguire served in the Army in World War II, seeing service in the Pacific and in Japan. He had been in the general practice of medicine since 1946.

Editorials

THE WORLD SITUATION AND THE RIGHT TO VOTE

Edgar Woody, Jr., M.D.*

Every day in the staff rooms and locker rooms of our hospitals we hear and participate in discussions centering about national and world affairs. The fact that so much time is given to these discussions is ample proof of the concern of the average doctor for the future of his country. In spite of our individual concern, though, most of our energies are consumed by these discussions without actually translating our opinions and ideas into action.

Traditionally, through the years the image of the doctor has been that of a strong individualist. We in the profession know this is still true for the most part. If strength and leadership were ever needed in the affairs of our country—they are needed today. While doctors by virtue of time limitations in their practice do not frequently seek public office, their influence in their individual communities is unquestioned.

No political party has a monopoly on the allegiance of the medical profession, and to contemplate such a situation is unthinkable. In these times it behooves each of us, as doctors and responsible citizens, to demonstrate our interest in good government within our individual communities. We must be recognized as a strong responsible group of citizens, if our voice is to be heard through the din of national and international politics. We must change the recent false public image of the doctor from that of a rather passive individual in civic affairs to that of a strong aggressive fighter for the principles on which this country was founded.

It is the opinion of the writer that a great deal of good could be accomplished by the doctors of Georgia on November 8, if we could all agree to close our offices either for the entire day or for a designated period during that day. The purpose of such an observance of election day would make it possible for the physician, his aides, and his patients to go to the polls on this crucial day. Not only would closing of doctors' offices facilitate voting but it would point up for all to see, the intense interest all doctors share in the future of our country.

Assurance would have to be given to patients that all their emergency needs would be served on this day. Scheduled operations could proceed without interruption. No patient need be neglected on this day. Suitable posters could be made available for display in doctors' offices outlining the election day schedule of closing.

Several doctors' groups have expressed interest in this observance of election day. It is hoped that the doctors of Georgia may consider such a plan of action at the local level.

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*Editor, Journal of the Medical Association of Georgia.

President's Page

"BASICS" OF CITIZENSHIP

Here are seven "basics" of citizenship which are recommended for every physician who takes his civic responsibilities seriously:*

. . . "The doctor's primary duty as a citizen is to be the guide and source of authority in all health matters relating to his community. This is an all-year-round civic responsibility, which his training and experience have qualified him to handle better than any other person in the community.

. . . "The doctor should openly identify with the party of his choice, and vote regularly at all elections.

. . . "The doctor should make an investment in democracy by contributing liberally financially to the party of his choice.

. . . "The doctor should encourage patients and others with whom he comes in contact to register and vote in all elections.

. . . "The doctor should keep informed on candidates and issues and let others know where he stands politically.

. . . "The doctor can help candidates of his choice by such means as displaying campaign literature in his waiting room.

. . . "The doctor should devote as much time as his professional duties permit to working for good government and for the political party of his choice."

A democratic way of life functioning under our republican form of government can survive only if its citizens have a fierce desire for freedom. When people of various civilizations preceding our own became willing to yield their liberty, bit by bit, in return for sops of promised ease and privilege from a paternalistic government, the results were disasterous. Can we learn from history? Is there a hard core of patriots who will show the toughness and self-denial required of good government? They must be sought out and given support by a growing body of citizens who will rededicate themselves to the spirit of freedom and self-reliance; who place ideals and integrity above material rewards. Such a movement needs the devoted backing of all liberty-loving Delawareans.

Lemuel C. McGee

*The PR Doctor, issued by Communications Division, American Medical Association, Chicago 10, Illinois (Special Citizenship Issue), July, 1960.

In Brief

'Prometheus Unbound'

In the list of fantastic new U.S. products appearing in Time Magazine (Sept. 19th), is a *transistor medical-recording device*, soon to be available to doctors. It can be swallowed and will track down causes of a patient's stomach upset.

D.D.A. New Slate

New officers and directors of the Delaware Diabetes Association elected on September 9, at Lewes are: Charles Levy, M.D., President; William T. Hall, M.D., Vice-President; Marvin H. Dorph, M.D., Secretary; Robert Klingel, M.D., Assistant Secretary; Herbert Baganz, M.D., Treasurer. Board of Directors: Drs. H. M. Baganz, E. M. Bohan, W. W. Briggs, M. H. Dorph, L. B. Flinn, W T. Hall, F. I. Hudson, R. L. Klingel, Charles Levy, J. A. Elliott, E. S. Resnick and Alexander Smith.

A Delaware First

Davis G. Durham, M.D., Wilmington, flew to Djakarta, Indonesia, on October 15th to join *Project Hope*, the floating medical center which is bringing the latest knowledge developed by the American medical profession to people of the Far East. Dr. Durham, the first ophthalmologist to join *Project Hope*, calls this a teaching expedition and will be "on board" two months.

Medical Society Of Delaware

At the Annual Meeting of the Medical Society of Delaware held in Rehoboth and Lewes on September 8-10, 1960, Lemuel C. McGee, M.D. assumed the presidency; Sylvester W. Rennie, M.D. became president-elect; Gerald A. Beatty, M.D., vice-president, Joseph W. Abbiss, M.D., secretary. Charles Levy, M.D., was reelected treasurer. Victor D. Washburn, M.D., was reelected representative to the Delaware Academy of Medicine. H. Thomas McGuire, M.D. and Leslie M. Dobson, M.D., will continue their two-year terms as delegate and alternate to the American Medical Association.

New Division

Major expansion in state aid services to support and assist official agencies in the development and operation of occupational health programs, will be emphasized in the Public Health Service's program of their new *Division of Occupational Health.*. As announced by the Surgeon General, this will replace the former Occupational Health Program.

That Panacea— Aspirin

There is danger of anemia in some sufferers from rheumatoid arthritis who rely on aspirin for treatment, according to researchers from Hammersmith Hospital, London. It's caused by loss of small amounts of blood through bleeding in the stomach and intestines due to aspirin sensitivity.

Taken in frequent doses, aspirin stimulates the body's hormone system and is known to reduce blood sugar, as well as fever and pain. This may prove it an inexpensive aid in relieving symptoms of diabetes and in lowering blood cholesterol, says the *New Physician*, journal of the Student A.M.A.

Personal Glimpses

Victor D. Washburn, M.D., heads Delaware's new Council to Improve Health Care for the Aged . . . Lewis B. Flinn, M.D., has been reappointed Governor for Delaware of the American Diabetes Association for the three-year term 1960-63 . . . Joseph J. Davolos, M.D., attended a symposium on infectious diseases, jointly sponsored by the AAGP and the University of Kansas School of Medicine . . . M. A. Tarumianz, M.D., will resign as superintendent of Delaware's three mental health institutions as of July 1, 1961; he will continue as state psychiatrist and chief consultant to the Board of Trustees of the Delaware State Hospital . . . Charles K. Bush, M.D., will succeed Dr. Tarumianz . . . C. J. Prickett, M.D., addressed the Home Safety Round-up Conference on "The Accident Threat to the Senior Citizen;" Maynard H. Mires, M.D., was panel member; topic — "Home Safety" . . . Irvine M. Flinn, Jr., M.D., addressed the graduating class of the Delaware Hospital School of Nursing . . . Lawrence M. Baker, M. D., elected president of the Kent County Unit of the Delaware Division, American Cancer Society, succeeded Otakar J. Pollak, M. D.; Aubrey C. Smoot, M. D., was elected president of the Sussex County Unit; Albert J. Wildberger, M. D., secretary; Leslie M. Dobson, M. D., chairman of professional education; Drs. James Beebe, Sr., Catherine Gray, and James E. Marvil, were chosen for the Board of Directors . . . Charles J. Katz, M.D., was speaker at a meeting of the Pilot Club . . .

The Avocado And Serum Cholesterol

Total serum cholesterol values fell significantly in 8 of 16 men (27 to 72 years of age) who were given 0.5 to 1.5 avocados per day to provide avocado fat in substitution for an equivalent amount of animal fat. Experiments showed that the lipid content of avocados is high (5% to 25%); that one avocado contains about 0.8 grams of sitosterol; that avocado oil has an iodine number of 90.4 Of the eight men whose cholesterol values did *not* fall significantly, three were diabetic; one was hypercholesterolemic. Upjohn Abstract.

Chloromycetin

"Chloromycetin, one of the most effective drugs used in medicine today, has saved thousands of lives. Exhaustive research efforts have not demonstrated a direct connection between chloromycetin administration and blood disorders; with the tremendous increase in the use of chloromycetin, the rate of aplastic anemia has remained constant during the same period." Statement by Harry J. Loynd, president of Parke, Davis & Co., at the Senate Sub-committee Hearing in Washington, D.C.

Brakes For Aging

Screening out unhealthy chemicals produced in the digestive process of laboratory mice has prolonged their lives as much as 26%. It may prove equally effective in slowing down the aging process in humans. Denham Harmon, M.D., University of Nebraska, addressing the International Congress on Gerontology, called these unhealthy chemicals "free radicals." He suggested that vitamin E and cysteine might prove capable of combining with these free radicals to counteract their formation, thereby slowing the aging process.

Contributors Column

Governor J. Caleb Boggs

The Honorable J. Caleb Boggs has been serving in governmental capacities since 1946 when he was elected on a Republican ticket to the House of Representatives and served three terms. In 1948, he resigned as a member of the House Committee on Expenditures in the Executive Department and House Committee on Administration, to accept membership on House Committee on Judiciary—becoming the first Delawarean in 132 years to gain this post. In 1952, J. Caleb Boggs was elected Governor of the State of Delaware and reelected in 1956. Governor Boggs is a member of the American Bar Association; was Chairman of the Governor's Conference 1959-60 and is President of the Council of State Governments.

⁂

Sidney Pell, Ph.D., obtained his doctoral degree from the Graduate School of Public Health, University of Pittsburgh, in 1956. Dr. Pell was statistician at the Diabetes Clinic of Bellevue Hospital, New York City, 1952-53 and is currently biostatistician for the Medical Division of the DuPont Company in Wilmington.

⁂

Joseph Robinson, M.D., Hahnemann Medical College '42, is a Diplomate of the American Board of Neurology and Psychiatry and Associate in Psychiatry at Hahnemann in addition to his post as Chief in Psychiatry to Philadelphia General Hospital.

E. M. Bluestone, M.D., is past-president of the American Association of Hospital Consultants, member of the Expert Panel on Medical Care for WHO and holds membership on several hospital-magazine boards of editors. Dr. Bluestone, in addition to his wide range of medical hospital affiliations, has pioneered many original projects such as Home Care.

⁂

Walter B. Koniecki, B.S., Albright College '48; M.T. (ASCP), St. Joseph's Hospital, Reading, Penna.—where he stayed on as blood chemist until 1953—obtained his M.S. degree in biochemistry from the University of Delaware in 1955. Before his present post as Supervisor of Du Pont's Clinical Laboratory, Mr. Koniecki was analytical research biochemist for the Industrial Hygiene Laboratory at Du Pont's Chambers Works Plant.

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Edward S. McCabe, M.D., University of Pennsylvania Medical School, is certified by the American Board of Internal Medicine and Consulting Internist to the Psychiatric Clinic, Philadelphia General Hospital.

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Robert A. Yee, M.D., graduate of Temple University Medical School '54, was in private practice from 1955-59 and is now resident in psychiatry at the Philadelphia General Hospital.

Edward W. Hagemeyer

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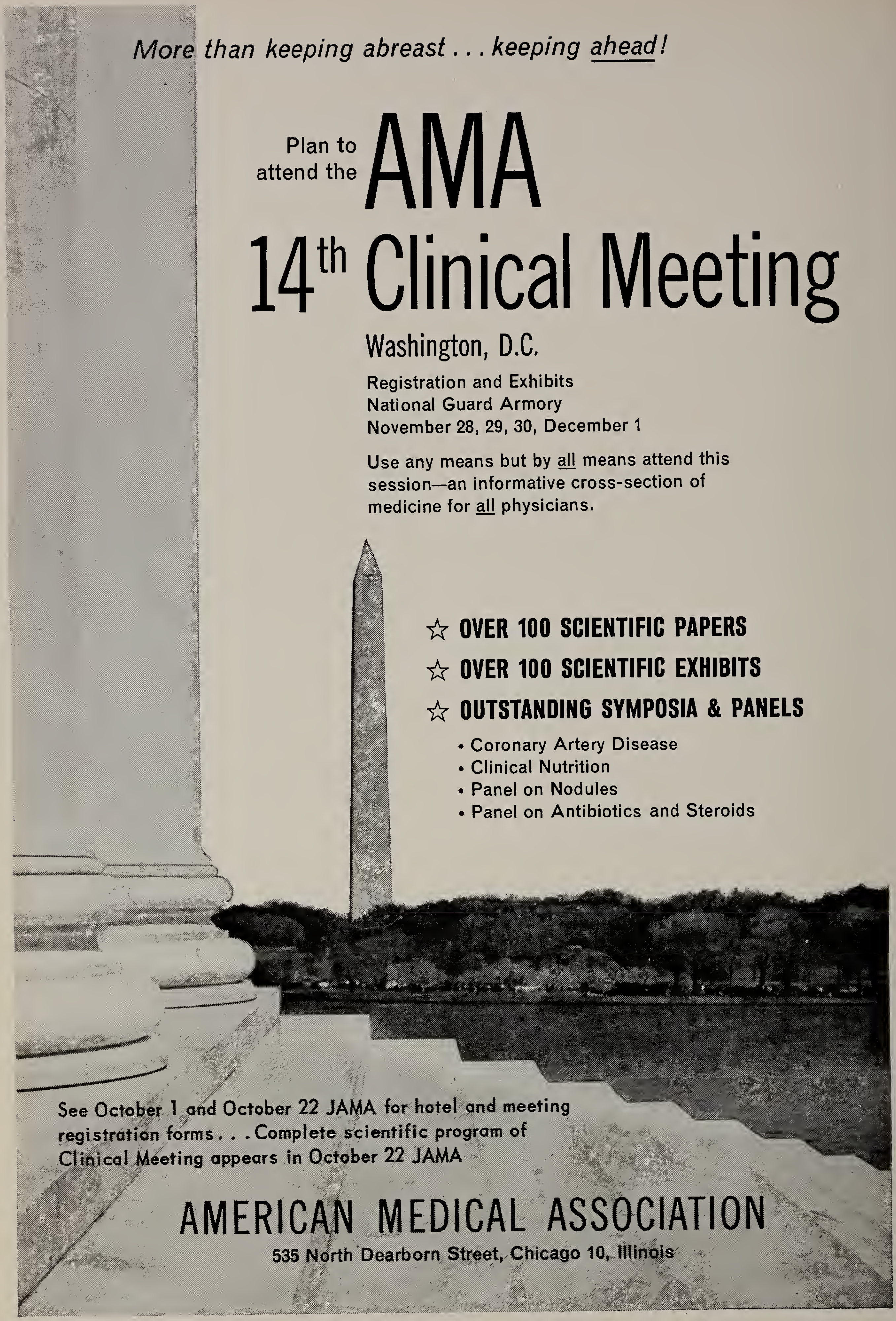

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THE "OPEN DOOR" FOR MENTAL PATIENTS

M. A. Tarumianz, M.D.*

The "open door" for mental patients is now a topic of considerable interest to personnel carrying major responsibility for the care and treatment of the mentally ill and seriously emotionally disturbed and to the general public as well. The meaning of the "open door" for mental patients varies widely. In some situations the term refers to one or more wards which have the doors open for a certain number of hours a day during which the patients may go in and out at will and unescorted. In one or two hospitals in the United States and Canada and in increasing numbers in Great Britain and some other European countries, the "open door" means the open hospital — in which all (or nearly all) the patients are maintained in wards which are unlocked and are without such security measures as grill work on the windows, security screens, and escorting personnel.

The "open door" in the care and treatment of mentally ill patients is not a new philosophy. The present movement toward granting greater freedom to a high percentage of patients with various medical classifications represents an extension or, in some instances, a revival of procedures which existed 75 to 100 years ago. In his *American Notes*, published in 1842 after his visit to the United States, Charles Dickens, the nineteenth century humanitarian novelist, described essentially the "open door" policy in writing of the life of patients at the Boston State Mental Hospital, which was at that time called the Boston Lunatic Asylum[1]. The Superintendent of Creighton Royal Mental Hospital in England in 1937, the year in which Queen Victoria came to the British throne, said of the treatment of patients in his hospital, "There is in this community no compulsion, no whips, no continued chastisement, simply because these are less effectual means of carrying any point than persuasion, emulation, and the desire of obtaining gratification."[2]

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In 1918 when the writer came to the Delaware State Hospital there was one ward completely open. A second ward was opened soon afterward. In addition, about twenty per cent of the patients had ground privileges. Many of the patients who worked in the various divisions of the Hospital went to and from their work unescorted. Through the years the number of patients privileged to go about the grounds unaccompanied, as well as to go alone into the city for shopping or other reasons, increased.

In 1948 when the Governor Bacon Health Center was established to provide residential care and treatment for psychotic, prepsychotic, and seriously emotionally maladjusted children, it was decided then to house the children in cottages the doors of which are open from morning until dark. Except when they are acutely disturbed, the children go unaccompanied to school, to the recreation areas, to the Infirmary, to the Child Guidance Building, and to any other buildings on the grounds as necessary.

When the State Board of Trustees assumed responsibility for the Hospital For The Mentally Retarded at Stockley in 1955, the "open door" philosophy was adopted. The cottages were unlocked, and many patients began to go from one area to another unescorted. A part of the training of these patients is designed to develop in them sufficient stability and sense of responsibility that they will be able to live successfully in the community.

The Underlying Philosophy

The philosophy underlying the extension of freedom to the mentally ill is fundamentally respect for the patient as a person and the growing acceptance of the idea that improvement in many mentally ill persons is facilitated by their participating as soon as possible in various aspects of normal living. Another important facet of the "open door" in the mental hospital is a belief that all procedures should be centered around the goal of helping patients to improve and return to the community within a relatively short period. The public is involved in making the "open door" in the mental hospital a reality. Some of the security measures adopted in the mental hospitals through the decades reflected the prevailing fear and anxiety concerning mentally ill persons.

Began in Scotland

The present movement toward unlocking the ward doors as well as instituting other evidences of freedom for mental patients seems to have begun in Scotland in 1949 with the opening of all the wards at Dingleton Hospital, Melrose, under Dr. George Bell, the Superintendent.[3] In 1952 Dr. D. Mac Millan at Mapperly Hospital, Nottingham, England, followed the plan adopted at Dingleton Hospital. The wards of another English hospital, Warlingham Park, near Croydon, were unlocked in 1953 under Dr. T. P. Rees,[4] who included Delaware State Hospital in his visit to the United States in 1955. On June 5, 1956, the last closed ward at Central Mental Hospital, Hatton, England, was opened under Dr. Edward S. Stern, the Medical Superintendent.[5] The Allan Memorial Institute under the direction of Dr. Ewen Cameron in Montreal, Canada, has spearheaded the movement in the Provincial Hospitals.[6] Beginning in July, 1955, with the opening of one ward for only two hours in the morning and afternoon, Dr. Herman B. Snow, Director of St. Lawrence State Hospital, Ogdensburg, New York, by 1959 achieved a virtually open hospital.[7] The Embreeville State Hospital at Embreeville, Pennsylvania, under Dr. Arthur Hecker is also almost completely open, as is the Central Islip State Hospital in Suffolk County, New York, under the direction of Dr. Francis J. O'Neill.

Interest in treating mental patients on open wards has been high in the past five years. Many public and private hospitals are experimenting with various programs providing greater freedom of movement for mentally ill patients. It is a mistake to think that any hospital for mental patients, whether so-called 100 per cent open or not, exercises no control over the patients. Just as in a general hospital, patients are under the care of nurses who follow the physician's direction regarding the activities appropriate for the particular patient, in the mental hospital there are patients who must be under strict surveillance of personnel during some phases of their illness. In some hospitals with unlocked wards, elderly patients who are likely to become confused and lost go about only when other patients accompany them.[8] The Superintendent at Coney Hill and Horton Road Hospitals, at Gloucester, England, experimenting with rapidly converting a closed hospital for mental patients into an open-door hospital, decided upon "the closed group" for patients who repeatedly eloped from the hospital.[9] The group consists of six or seven repeated chronic escapers under the constant supervision of a nurse who is responsible for planning the daily program for these patients. All of these patients are chronically hallucinating and seriously out of contact with reality. Patients with strong suicidal or homicidal tendencies, when acutely ill, must be given protection against their hostile impulses. Experience with the open door for a psychiatric receiving service in a county hospital in California, showed the manic patients as the most difficult to treat in an open ward and depressed patients the next most difficult group.[10] A hospital in which mentally ill criminals and psychopathic persons are treated under the law obviously cannot permit these patients freedom to move about at will.

Larger Staff Necessary

Opening ward doors does not mean turning seriously mentally ill and severely emotionally disturbed patients loose to wander aimlessly around. Nor does it mean that a hospital can reduce its staff. The purpose of the "open door" is to create a milieu in which the needs of patients can be met on an individual basis. With open wards every aspect of the patient's life is a part of the therapy and therefore must be carefully planned. More, not fewer, staff is necessary to plan and execute a program of activities — social, industrial, medical, and psychological — which will be truly therapeutic for each patient. Such a program is different from the housekeeping and maintenance chores long a part of the hospital routine. An activities program which will contribute to the personality integration of the mentally ill or emotionally disturbed patient in residential care is one which gives him training for living outside the hospital and at the same time ego satisfaction as well as a sense of personal worth. Occupations and recreational actiivties away from the ward are quite important.[11]

One of the most interesting accounts in the recent literature on the open hospital is that of the Psychiatrische Inrichting Franeker, a 750 bed hospital in the town of Franeker, in the Netherlands.[12] The buildings of this hospital were once part of a university and are located along the principal canal and main street of the town. All day long more than a score of doors in this hospital are unlocked and unguarded. Through these doors go patients to the numerous workshops established by the hospital. At this Dutch hospital the principle followed is that all patients must work, regardless of their age, provided they are not somatically ill.

Work of Volunteers Important

At the Delaware State Hospital all but one of the wards are open in the new Willard Springer, Jr., Building in which acutely ill and convalescent male and female patients are treated. The Observation Clinic has always been entirely open. Five other wards are now open. Very full social and industrial therapy programs provide meaningful activities which, as adjuncts to psychotherapy and chemotherapy, help to rehabilitate the patients. The work of volunteers has played an important part in the opening of wards at the Delaware State Hospital. Volunteers have been "ambassadors of good will" for the Hospital. They have performed a significant service in helping to dissipate the general fear of the mentally ill. Many of the volunteers have worked among seriously ill patients and know that even this group responds, to some extent, to the efforts of others in their behalf.

Attitude of Staff Stressed

All through the literature reporting the experiences of hospitals providing greater freedom for mentally ill and emotionally disturbed patients in residential care, the importance of the attitude of the staff is stressed.[13] It is essential that all personnel, particularly nursing and attendant staff, value even the most deteriorated patient as a personality. The staff must also be oriented around the philosophy that most mentally ill persons can recover if given proper treatment in time. Some of the resistance of personnel to the idea of giving greater freedom to hospitalized mentally ill patients is due to apprehension that they will be held responsible if some mishap occurs involving a patient. The Administration must reassure the staff that such will not be the case if all perform their duties diligently.

Freedom Removes Incentive To Leave

According to the reports of superintendents and other personnel of hospitals in which the doors have been opened, the rate of suicides and elopements has not increased.[14] In fact, the opposite situation has been the general rule. In a few instances in which there were more escapes immediately following the opening of the wards, soon fewer patients escaped.[15] At the St. Lawrence Hospital in New York State, the elopement rate was drastically reduced after the wards were opened.[16] Without the challenge of locks and other usual security measures some of the escapers had no incentive to leave. Other positive results of these changes in patient care and management appear to be less tension and aggression among patients, even the acutely ill. Mentally ill patients, like most other people, seem to act according to the expectations of others regarding them. The truth of a physcian's observation that, "angry aggression appears to be closely related to a specific stimulus in the immediate environment"[17] is supported by the behavior of patients who are being treated under the philosophy of trust and individual worth.

Not a Panacea

Extensive study of the various programs and plans for the "open door' 'for mental patients indicates that the unlocking of wards is not a panacea. It is only symbolic of a movement toward providing for the mentally ill and emotionally disturbed the most effective treatment to meet their individual needs. It should be realized that there will always exist a small number of patients whose most effective treatment will involve some security measures, at least for a time. The "open door" is only one of a number of methods involved in the recent emphasis on various types of treatment to help the patient improve and return to the community as speedily as possible. To make this policy truly operative the resources of community agencies, both public and private, as well as the support and aid of individuals must be mobilized. The "open door" must really be an open acceptance of the mentally ill patient as a person of dignity and worth and one, for the most part, able to live effectively outside the hospital after treatment.

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CHROMOSOMAL ABNORMALITIES

Mental Deficiency and Disease of the Endocrine

● **Despite the phenomenal advances in our knowledge of the human chromosomal abnormalities, the subject is scientifically at the level of identification and correlation to "nature's experiments in human development."**

Charles William Dunn, M.D.*

The cretin establishes the role of thyroid agenesis and heredity in mental deficiency. Myxedema, the acquired severe form of thyroid deficiency, produces mental impairment, psychosis, and a cerebellar ataxic syndrome[6]. Thyroid therapy will relieve the myxedematous manifestation but is of limited value in the mental deficit of cretinism. In cretinism the cerebral pathology is irreversible and developmentally acquired; whereas in myxedema it is established within previously normal tissue and the pathology is not developmentally acquired.

The value of endocrine therapy in developmental deficiencies must be assessed by the value of its procurable therapeutic end results upon the individual endocrine de--ficiency syndrome.

Currently, epochal scientific advances have been made in sex chromatin studies of the nucleus of the human cell and of the chromosomal constitution of the human cell. Barr[1] and others have demonstrated that a study of the nucleus of the human cell permits identification of the sexual source of the cell. Ford and Jacobs[2] and others have been able to culture human cells of the bone marrow and determine the normal chromosomal constitution, including the sex genes, Female X and Male Y. Barr's discovery permits differentiation of the somatic state on a sexual basis by nuclear sex chromatin determination. The basis of the test is the identification of a distinct nuclear small mass, separate from the main nuclear mass and lying against the nuclear membrane. This mass is postulated as representing an X gene and thus a predominance of these type cells within a given count of cells indicates an XX, positive female sex chromatin, female somatic genotype.

The true sex genesis of the human is determinable only by human cell culture and cell study in the chromosomal state. Ford and Jacobs accomplished this and found that instead of 48 chromosomes, as had been accepted for years, there were

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only 46 chromosomes in the human cell. The 46 chromosomes consisted of 22 pairs of autosomes and a pair of sex genes. XX for the female and XY for the male. The autosomes posessed structural features which permitted them to be arranged in pairs and the pairs in groups. At a recent conference[7] the pairings were given an official classification so that uniformity of reporting could be accomplished.

The conference was required because, within a period of a few years, research in human chromosomes had become world wide and investigative evidence of anomalies within the sex chromosomal state was rapidly accumulating. If the human pattern is akin to that known to occur in experimental genetics of the fruit fly, then it is possible that autosomal anomalies may enter into the problem of sex and somatic determinations.

Wide Knowledge Required

Presently the scientific investigations in this field are being directed towards procuring as wide a knowledge as is possible of the various types of sex chromosomal combinations which are occurring in the human who is representative of an "an experiment in human development."

Danon and Sachs[3], eminent geneticists, investigated the sex chromatin nuclear pattern of various endocrine deficiency states with gonadal deficits and developmental abnormalities and confirmed the reported findings of male sex chromatin in Female Turners Syndrome and Female Sex Chromatin in many Klinefelters (male eunuchoidism) Syndrome.

Danon and Sachs made a classification of human intersexes based on the Gonads and; from the clues which the "relative discrepancy from the phenotype to be expected from their Chromosomal formula"; they conceived abnormalities of the X gene as XO, XXY and XXX and the possibilities of mosaics, mixtures of XX and XY.

All these predicted chromosomal anomalies have been demonstrated and XXX (XY) and XXXY are now reported. The major observation being that even in the presence of testes a female "sex chromatin" and "chromosomal pattern" may be present.

Danon and Sachs theoretically assume for man three sets of casual factors for intersexuality; (1) Genes, presumably single gene mutation; (2) Abnormal distribution of sex chromosomes (XXY, XO and etc.); (3) Endocrine dysfunction induced by external factors or by genetic factors affecting the endocrine system. They include in the intersexual groups "individuals whose anatomical features (even if only secondary sex characteristics) belong to both sexes or display exterior hypogenitalism."

Turners Syndrome

Heredity alone may be the sole factor in a developmental anomaly as in coarctation of the aorta in males; this genetic key was significant to Lennox who noted a high incidence of coarctation of the aorta in Turners Syndrome (Ovarian Agenesis) and studied the sex chromatin nuclear pattern in Turners Syndrome and found that most patients were male sex chromomatin negative. It was later found when cell culture was available that in Turners Syndrome there were 47 chromosomes present and the sex genes were XO.

It is evident that in Turners syndrome the developmental anomaly and the gonadal agenesis are both hereditary and endocrine defects that are developed from within the chromosomal abnormality.

It had been a premise that the male sex gene Y was capable of masculinizing the soma and the undifferentiated gonad, since it overcame the feminine determinant effects of an X gene. In Turners syndrome we have no Y gene yet the soma is male in type. To explain this it must be assumed that the X gene is feminine weak or that an autosome carries the "M"[3] potency. Klinefelters Syndrome's patients with an XXY sex genetic pattern do however support the premise that two X genes are stronger than one Y gene, because despite the presence of a hypoplastic male gonad about half of Kleinfelters patients are sex chromatin positive (female), and have distinct feminoid personalities. In some patients there is also a degree of mental deficiency which varies from mild to major degrees.

Apparently the XXY gene and the associated 47 chromosomal pattern represents the point in chromosomal abnormalities where mental and gonadal deficits are correlated at an etiologic level, because as the XXXY chromosomal pattern was found we find amentia existing and a more severe degree of gonadal deficiency present.

Mongolianism — Gain of One Chromosome

Mongolianism did show concrete evidence of being associated with abnormal chromosomal constitution. In mongolianism the abnormality consists of the presence of 47 chromosomes, a gain of one chromosome. This gain of a chromosome occurs in the "21 group" of autosomes and results in a trisomic autosome in this group replacing two pairs of the group. The sex genes are undisturbed.

In mongolianism we have not observed any hypogonadal states which were unattributable to an endocrine deficiency.

The clinical endocrine picture which we have conceived as existing in Mongolism is one of an anterior pituitary-thyroid deficiency and this is featured by a varied degree of this functional deficit observed in the individual mongolian. Whereas the endocrine deficits vary in the individual mongolian, the variance in mental capacity is not as marked. Further we cannot correlate the severity of the endocrine deficit to the degree of the developmental deficit. We do believe that hypothyroidism does augment the congenital functional deficit due to the developmental cerebral pathology of mongolism; however this later feature must be considered to be an acquired mental deficit and distinct from the pathologic mental deficit.

It should be evident that if an attempt is going to be made to apply endocrine therapy to abnormalities of development in which a chromosomal abnormality is a basic coacting factor in the deficit development of mind, body and genitals; then we must develop a comprehensive, if not complete, patholigic survey of the patient.

The pathologic survey should determine the onset time of the pathology and its extent; the functional deficit the pathology induces and the degree of reversible and irreversible pathology present. The histologic features of the pathology should be known in the tissues and the organs. The condition of the glands within the endocrine system at the cellular level is of extreme importance to the therapeutists. Functional inadequacy at the cellular level must be determined to warrant hormonal therapy. This must be evaluated by established pathologic data or by precise functional tests or clinical stigmata.

The embarkation of a therapeutic hormonal programme on the basis of empiricism or a "shot gun" can only be uninformative in a scientific sense and is more likely to be ineffective or injurious.

Despite the predominant evidence indicating the important role of the endocrine system disorders as a coacting factor in chromosomal abnormalities, we are very far from portraying or designating their role of primacy in establishing the chromosomal abnormality.

Inception at Fertilization

It is evident that the chromosomal abnormality has its inception when the ova is fertilized. It is established that the three months old embryo has had its sex chromatin pattern established in its somatic structures, consequently, there is but one conclusion at hand, namely, at birth all cells are imprinted at the nuclear level with a chromosomal pattern.

Barr's test was performed on skin, buccal mucosa, bone marrow, the testes, vaginal mucosa, the polymorphonuclears of the blood, urinary sediment cells and the cells of the amiotic fluid and except in a rare instance or two, a uniformity of sex chromatin sexual type was determined, in all human cells examined.

The endocrine therapeutist is confronted with the problem that it is patently impossible for him to design a therapeutic management which will attack cells at their reproductive and replacement level with a forcefulness sufficient to alter the chromosomal phase of reproduction.

The visionary hope of the therapeutist is that by means of endocrine therapy he may, in time, alter or direct towards normalcy the genic or autosomal mutation developmental path.

A therapeutic programme of this type has been accomplished by Wilkins[5] and others. Applying the principle that if adequate exogenous source of a hormone is made available to the body, the endocrine gland producing the hormone and its stimulator will go into a resting stage or into inactivity and atrophy; large dosages of cortisterone were administered to congenital adrenal cortical hyperplasia patients and adrenogenital syndrome patients. The results were that the intersexual state was altered towards normal and the masulinization of the female was effectively controlled and the physical external genital manifestations were in the main involuted. Functional capacity, on a physiologic sexual basis, was also established. The therapeutic result proves that where we have a single, specific hyperhormonal factor and, despite, its hereditary or congenital features; it is possible to overcome the intrinsic hormonal defect with a crash therapeutic programme.

Cells in Immature State

The pathology of congenital adrenal cortical hyperplasia is well established and its extent and ability to sclerose the internal genital structures is well known; one is led to believe that despite this pathology there remain adequate cells in an immature state to be stimulated to normalcy if their endogenous inhibitor is dissipated by therapy.

The crash corticosteroid therapy used in adrenal hyperfunctional states were not without their hazards as we demonstrated in corticosteroid therapy of arthritis. The biochemist has attenuated this risk of side and toxic effects by molecular substitutions into the corticosteroid ring which reduced the incidence of the side effects.

Complex Problem

The adrenal cortical states producing hypersteroidism are acute states of hyperfunction, whereas the majority of endocrine and chromosomal abnormalities are sustained, chronic conditions which are progressively manifested in the general developmental character of the respective sexes. In these circumstances the therapeutic problem is complex and general, because it is asked to cope with a functional and structural digression at the chromosomal level.

All hormones have a metabolic role in the human economy if we properly evaluate their range of action and a great area of this metabolic activity is in the body chemistry. This is quite distinct from our general concept of metabolism as oxygen consumption for energy and body temperature.

To a degree we have a knowledge of the chemistry of the chromosome in lower forms of life but we are unaware of any hormone which possesses the potential to interact with the chromosomal chemical constituents.

If the present trend of chromosomal investigation continues to direct its research for material into the mental hospital and we continue to find the more complex abnormalities of chromosomal sex genes in the mental patient, associated with the severer forms of developmental retardation — which are definitely related to endocrine abnormalities of function — it is not difficult to conceive that endocrine therapy must be explored in these mental patients.

The term, exploratory endocrine therapy, as we use it, does not mean that patients shall be administered hormones unscientifically. It means that the plan of therapy will adhere to the basic law of endocrine therapy we have maintained; namely that a hormone is only effective in an endocrine deficiency syndrome when its specific deficiency is present. The exploratory phase is in the long term therapeutic end point of endocrine therapy upon the pretherapeutic deficits of development, mental, physical and sexual.

Endocrine therapy in this class of patients does not permit controls or blinds for comparative effects between treated and non-treated. Even in the class of patients in whom treatment is undertaken there is considerable variance in the degree of subnormalcy and in the retarded developmental pattern. Of the known endocrine states in which abnormal sex chromosomal constitution has been demonstrated, the most consistent developmental pattern is observed in Turners Syndrome and Ovarian Agenesis. It is noteworthy that also in this condition, estradiol compounds act most specifically and in a functional area.

Full Knowledge Not Reached

We do not believe that we have reached our full knowledge of human chromosomal anomalies and until we do it is hazardous to depart from the fundamental therapeutic rules we have observed over the past 30 years.

We have made exploratory ventures with endocrine therapy in Mongolism and Achondroplasia. In both clinical conditions we have established clinical evidence in the somatic tissues that an anterior pituitary and thyroid deficiency exists. Gonadal developmental deficits may or may not be present in these states but has been observed in our cases.

We have treated achondroplasia in both a young male and a young female and the results in both were successful in promoting growth and sexual development. The measure of beneficial results is best evaluated by stating that each parent had a sibling with achondroplasia at birth and the female child, first born of the female treated achondroplastic and the male child, sibling 3, of the male treated achondroplastic, were brought for corresponding endocrine therapy. The achondroplastic brother of the achondroplastic male acted as a non-treated control.

It can be concluded therefore that despite the developmental benefits derived in the male and female achondroplastic; endocrine therapy did not stop the inherited chromosomal mutation when therapy is first instituted at ages 12 to 14 years. Corresponding endocrine therapy is producing corresponding developmental results in their infants with hereditary achondroplasia.

We have observed the long term results of endocrine therapy in Mongolians where we find a consistent developmental deficit pattern associated with anterior pituitary-thyroid deficiency. In the larger group of patients at the Hospital for Mentally Retarded we have had an opportunity to evaluate the results of up to 18 years of endocrine therapy and on the basis of the long term end result upon the developmental pattern and compare the endocrine treated Mongolian group with a much larger non-treated Mongolian group.

The endocrine treated Mongolians are superior in health and in their somatic development. The latter permits them to be integrated into the work force of the institution at a level where an economic saving is accomplished. In a major degree the work capacity is the result of the endocrine therapy preventing progressive mental deterioration and from therapy establishing a normal metabolic level which indirectly improves functional capacities.

Benda[4] demonstrated the post-mortem examination of the anterior pituitary and the thyroid consistently indicated cellular pathology in these glands which was indicative of a subfunctional cellular state in the hormone producing cells.

Dangers Encountered

Since our therapeutic plan in Mongolianism was predicated upon producing a progressive and long term therapeutic end result we only administered subdeficiency dosage in order to maintain a consistent biophysiologic demand upon the endocrine glands. As the child advances in age up to 10-12 years the endocrine glands undergo successive periods of development to meet the advancing body mass and functional demand. The administration of endocrine dosage which effaces this physiologic demand results in the endocrine gland remaining in its infantile functional capacity, at least it does not fully develop at its normal physiologic curve of development.

Wide Range of Normalcy

No thyroid functional test is critical enough, because of the wide range of normalcy, to conform clinical hypothyroidism in the young developing child. Equally, we have no test accurate enough to determine that low dosage of thyroid is exhibiting a therapeutic response in the patient. We are required in both diagnosis and therapy to determine these states by objective and subjective indicators of lack of thyroid in the health and developmental pattern of the patient; in their functional capacities and in those somatic tissues which are responsive to the lack of thyroid hormone and improve their condition under thyroid therapy.

The effectiveness of maintained administration of thyroid gr. 1/10 was demonstrated in a very severe case of hereditary infantalism presenting the maximal possible degree of general developmental retardation with severe mental deficiency and mutism.

Case History

A female patient at H.M.R. is aged 22 years old. Her height is 31 inches and her weight is 21 lbs. These measurements are similar to her elder sister's who, at age 11 years died from pneumonia and was buried in a 32 inch casket. Her appearance is that of an elderly lady with prominent arcus senilis of her eyes. She is mentally deficient and is fearful, fretful, cries and moans almost constantly. She resists care and attention, appears very depressed and thrusts away her toys, dolls and even her food. The scalp hair consists of a small central lock of very fine, blond hair. There are a few dark, coarse pubic hairs—otherwise the skin is hairless. The skin is glistening and appears sclerotic. The skin is taughtly drawn over the facial bones and the subcutaneuos tissues in general. All bony eminences stand out prominently. In the pretibial areas pitting is demonstrable. The thyroid is not palpable. The heart and lungs are negative. The lower extremity muscles are in a spastic state and extension of the foot is present. The spasticity can be partially overcome by gentle, firm pressure. The external sexual organs are infantile female. A small introitus is visible. Mouth—edentulous. X-rays show that the epiphyses are closed. The sella is small and proportionate to the small sized skull. Vaginal cell sex chromatin study is positive, indicating a female genotype.

Our original examination of the patient indicated that somatic evidence of hypothyroidism was present but due to extreme and hopeless state of retardation of physical, sexual and mental development; (age 2 year old height and weight); and her mental agitation superimposed upon her mutism and mental deficit; our judgment was that endocrine therapy could contribute no long term benefit to this patient.

The mental state of "the little old lady" became "pitiable" and we yielded to the pleadings "of trying to do something to help her".

Thyroid extract U.S.P. gr. 1/10 daily was prescribed. Within six weeks a marked improvement in her mental state was noted in that she was becoming cheerful and sought attention. Later new growth of scalp hair appeared and there was a loss of pretibial pitting. The skin became less taught and the texture softer.

The change in personality was striking. She would sit on our laps and caress us whereas previously she shrunk away from us, she smiled and played with her toys.

At the end of 9 months of thyroid gr. 1/10 daily a bloody vaginial dishcarge was reported which persisted for 3 days and in small quantity. For a period of months regular cycles of vaginal bleeding occurred and general mental improvement was maintained. There was no evidence of growth stimulation, (Epiphyses were closed).

Thyroid dosage was increased monthly to observe any enhancement of therapeutic effect until 1/4 grain daily was administered. We felt that the increased thyroid dosage did not improve ovarian functional capacity and we were having evidence of hyperactivation and restlessness. At this time thyroid therapy was discontinued during a cycle of bleeding to determine the effects of withdrawal of thyroid therapy.

The next cyclic vaginal bleeding did not appear and within two months after stopping thyroid therapy a return to the pretherapeutic mental state was obvious. The hair ceased to grow and the new hair growth began to fall out. The skin was resuming its original appearance and pretibial pitting was reappearing.

The patient was untreated for about 9 months to define the full withdrawal effects and then therapy was resumed at gr. 1/10. The resumption of thyroid therapy again established its early effects upon the personality but at the end of 9 months of therapy the cyclic vaginal bleeding had not been reestablished.

During the period of cyclic bleeding a vaginal smear showed a mild estrogenic reaction. Vaginal smears during resumption of therapy were not estrogenic positive.

She developed virus pneumonia at this time and succumbed to the infection.

Thyroid therapy, 1/10 grain daily established a primary functional response in the ovary of this severely underdeveloped female then at age 23 years. It stimulated hair growth and improved the characters of the skin, dissipated pretibial pitting and produced a profound and startling benificent improvement in her psyche and mental state. Withdrawal of thyroid therapy, after an increase of dosage had failed to establish an enhanced effect of therapy; resulted in a prompt loss of cyclic vaginal bleeding which had been maintained for months under therapy and stoppage of hair growth with a regression of the improved state of the skin to its previous characeristics.

Long-Term Effects

We feel that in this severely retarded and adult patient we have firmly established the long term therapeutic effects upon development and function of thyroid gr. 1/10. It is this same principle which we maintain therapeutically in clinical underdevelopment of growth and sex in children and with success; provided thyroid deficiency can be clinically established in the general clinical picture of the patient.

The therapeutic problem for consideration is to what level of rationality and effectiveness can we apply our therapeutic experience of the past 30 years to the problem of chromosomal abnormalities demonstrated present in the human and in particular during infancy and childhood and in mental deficiency. There is in the very near future no reason why chromosomal abnormalities should not be determined in the antenatal period of life in suspected hereditary carriers.

Our opinion is that when a fuller knowledge of chromosomal abnormalities is at hand and their relationship to mental deficiency and mental disturbances are more firmly defined; the coexistence of the endocrine deficiencies with these mental states will indicate the importance of correcting hormonal deficiency during the developmental years and instituting therapy as early as possible.

Role of Therapy Must Conform

The therapeutic outlook must be based as was demonstrated in Mongolism, upon the long term end results on the involved systems and functions. The dosage of hormones administered during the developing years must be proportionate to the normal endogenous bio-physiologic thrust of the age period. Basically the role of therapy must conform to the normal yearly developmental increment and not be constituted to surpass natural yearly developmental phenomena. Invariably therapeutic attempts to supersede these hereditary normal yearly forces brings short term impressive results but a sacrifice of the optional long term results procurable when nature‘s laws of normal yearly increments of development are respected.

We conclude that the presence of chromosomal abnormalities; definite endocrine deficiencies with developmental retardation and mental deficiency in a patient draws direct attention to the endocrine deficiency and the probable role of endocrine therapy in this class of patients. It must be noted that the thyroid, the anterior pituitary, the adrenal cortex and the gonads are directly active in effecting cell growth and its maturity. Both the hypofunctional and the hyperfunctional states of these glands clinically demonstrate their respective roles in retarding and accelerating growth and development.

Chronological Growth

The initial therapeutic approach of therapy in this class of patients must de devised on the premise that the optimal therapeutic effects procured are consistent with and chronological with the normal curves of growth and development. Definitive information on the long term value of endocrine therapy in developmental deficits associated with chromosomal abnormalities may be procured. If long term therapeutic end results demonstrate that developmental gains have been obtained; it then may be possible to adjust therapy to establish a further therapeutic improvement.

We have maintained the foregoing premises because it is possible in the developmental deficiencies, because of the extreme degree of retardation usually present, to procure flashy therapeutic results with short term crash therapies. In the process of doing so we consume all the potential of growth within all the cells and ultimately the cells predestined for replacement are also untimely consumed. The therapeutic end result here is complete cessation of development and insensitivity to further therapy.

Formidable Task

It must be acknowledged that the therapeutic task in patients with chromosomal abnormalities is formidable. In most respects the mongolian represents this class of patients and their chromosomal abnormality is established. We have determined at H.M.R. that starting endocrine therapy during early infancy in the mongolian is superior to withholding therapy until age two years as was our former practice. The need for early therapy was indicated by the presence of endocrine and cerebral pathology at birth in the mongolian. At the end of six months the infant has lost the carry over effects of the maternal hormones and it is at this period the deterioration of the untreated mongolian begins to be manifested and institution of therapy at this period is warranted.

In determining the endocrine therapy in the abnormal chromosomal class of of patients we will unquestionably have to pursue a therapeutic management plan which is primarily directed to the endocrine features of the individual patient and begin the therapy in infancy and assess the yearly therapeutic results to the normal curves of growth and development as they are defined and available. In substance this means that to procure optimal results and scientific conclusions of clinical value the endocrine therapy must be planned, adjusted and critically analyzed as the age of the patient advances.

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Writer's Workshop

A medical writer's workshop will be held in connection with the Fall meeting of the Delaware Valley Chapter of the American Medical Writer's Association Monday, December 19th, at the Philadelphia County Medical Society Building, 21st & Spruce, Philadelphia. Time: 3:30 to 5:30 P.M. Manuscripts for review should be submitted before December 1st to: Julian Sterling, M.D., c/o Albert Einstein Medical Center, Old York and Tabor Roads, Philadelphia, 41. Registrations may be made at the Journal office—no fee. Cocktails and dinner preceding the evening meeting of the Association are optional (small fee) for interested writers.

THE SCHOOL

A Factor in Emotional Problems and Delinquency in Children

● **What is the relationship between poor academic achievement, juvenile delinquency, and the curriculum?**

Harry S. Howard, M.D.*

Leon Petty, M.S.**

A considerable portion of the adolescent and pre-adolescent patients examined at the Mental Hygiene Clinics in Delaware as well as in other clinics has been involved in some type of activity which may be related to emotional difficulty and more specifically, to delinquency. This behavior covers a variety of transgressions against social patterns and undoubtedly is multicausal in origin. Thus the home situation, family economic circumstances, inherent characteristics, etc., are all involved in the etiology and in the dynamic development of these patterns of behavior. Of course, too, these delinquent patterns are followed through and have been observed at this clinic going on into the adulthood of some of the patients. These antisocial activities have been seen to continue into adult life.

As noted above, etiologic factors are multicausal but the authors feel that since the child spends much of his waking time in school, the contributing factor of the school environment needs further consideration and evaluation. All of the agencies mentioned above have been considered as being "attacked" by the delinquent activity of the acting-out individual but little thought has been given to the concept of these agencies as the "attacker" and against which a defense must be built up and retaliatory measures must be taken.

Psychiatric and psychological evaluations of the individuals point out certain reaction tendencies early in life and reveal, at the same time, certain academic problems with test results which have come to be considered as almost classical — i.e., significant reading deficiency with arithmetic scores higher than reading scores, with limited vocabulary and with performance test scores higher than verbal. In these individuals, attention span is limited and interests are predominantly mechanical and manipulative rather than academic.

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These tendencies then, existing in the school environment where the academic is stressed and where the short attention span is equated with "badness," produced further emotional stress with increased hostility to the "rejecting" school, to adult authority, and a vicious cycle is established. Attempts at pressure in academic areas, even under the guise of assistance, produced frustration and such activities on the part of the school, as special reading help, are viewed with suspicion and hostility and with an increased degree of loss of self-esteem by the individual involved.

The authors are well aware of the fact that the reaction of these children are multicausal. This has already been mentioned. It is obvious that some children come to school well-poised emotionally mature and ready for the interests at hand while others do not. However the authors wish to stress the role of the school as the "attacker" as well as the "attacked" and the effects of the academic problem, and more specifically, the reading disabilities, on the total emotional life of the individual, on the feelings of frustration, inadequacy, and the subsequent resentment. All reading activities and all the school activities come to be seen as dangerous to the child and avoidant activities replace good motivation. Though it is obvious that a variety of reactions may take place — neurotic, habit disturbance, or actingout behavior, the latter reaction is most common and creates the greatest amount of "problem."

Random Samples

With these thoughts in mind the authors selected a random sample of adolescents who had already been adjudged delinquent and had been committed to the Youth Services Commission (the Delaware authority for rehabilitation of youthful offenders). This sample consisted of fifty children ranging in age from 8 to 16 years. Each of them had been given an individual general intelligence test and an academic test at the clinic usually after they had been committed to the Youth Services Commission. While it is obvious that the sample is not really a true representative random sample of the population at large, it was felt by the authors that this sample would give some information regarding the contributions of the school to the emotional disturbance and the reactions of the child.

Results of the Investigation

The individuals involved achieved intelligence quotients ranging from borderline level to intelligence at a superior level. Table I gives the distiribution of the quotients by sex. It should be noted that the majority of these youngsters were of average or better intelligence though the proportion in the mildly limited group was somewhat larger than the general population (estimated).

Table I — Intelligence Quotients

	70-79	80-89	90-109	110-119	120 and above	
Male	7	6	15	1	2	—31
Female	6	1	11	1	—	—19
	13	7	26	2	2	50

The reading grade achieved on the achievement tests ranged from 1.4 to 11.1 with the actual grade completed in school ranging from grade 2 to 11. However the expected grade (as related to actual age) yielded a range of 3.2 to 12.8. Thus when the academic achievement grades are compared to actual grade placement they are only slightly low but when compared to the expected grade reveal a discrepancy of approximately two years all the way down the line. The mean difference between the actual grade placement and the achievement test grade varies from .3 to 6 grades of reading disability. The discrepancy between the grade placement and the theoretical grade varied from 0 to 9 years of reading retardation.

Table II summarizes the mean difference between the actual grade placement and the achievement and theoretical grade level.

Table II

No. of years retarded	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9
Achievement test grade	15	10	10	3	10	1	1	0	0
Theoretical grade level	5	8	6	6	6	8	4	6	1

The significance of the above results then indicates that over half of the samples show a significant discrepancy (more than one year of actual reading retardation) between the achievement test grade and the actual grade placement and that this discrepancy becomes more marked when one considers the grade expected as based on the number of years in school. In the latter case, approximately 90% of the sample shows more than one year of reading retardation. It is also noted that though the intellectual level (other conditions being equal) of the individual affects his reading ability, the variation for the population sample was considerably greater in those subjects with average than in those with below average intelligence even though most of the latter group were placed in grades above their achievement level. Although the disability varies with the intelligence, it is nevertheless widespread for the group studied and, according to our findings, is more prevalent in males than in females. Though we cannot account for this latter factor on the basis of our small study, it is suspected that the need for achievement in the male is greater than in the female and so he suffers a greater loss of self-esteem and greater reaction.

Also it is noted that though a large proportion of the samples achieved an intelligence quotient below the average range, their actual expected grade levels reflect their inability to learn to read but that they differ from the average and above average only with respect to the fact that the latter group showed a greater range than the former in terms of retardation. With increasing levels of academic retardation, greater frustration and acting-out behavior was exhibited by the group with average and above average intelligence. Thus there appears to be a strong indication of positive correlation between academic disabilities, particularly related to reading and acting-out behavior and/or delinquent behavior.

Summary and Conclusions

Findings on this limited sample show the high correlation between reading disability and acting-out behavior:

1. The vast majority show a typical pattern of reading disability.
2. We found that the discrepancy between the expected grade and achievement grade varied from 0 to 9 grade levels of reading retardation and that this is a greater amount retardation than the discrepancy between theoretical and achieved grades.
3. The discrepancy between the individuals of limited intelligence is not as great as that for the average and above average I.Qs.
4. As has already been indicated, there appears to be a strong correlation between reading difficulty and acting-out behavior.

It is the conclusion of the authors that the school curriculum plays a significant role in the development of delinquent patterns and that the cessation of academic pressure, particularly as this involves reading activities (those school subjects which involve reading directly) might best be considered and a substitution of "action" activities (such as might lead to skilled or some unskilled employment) be substituted. This matter of loss of self-esteem which accrues to the individual by the academic limitations would be eliminated or at least reduced and a source of ego gratification might be substituted. It was the considered opinion of the authors that this program would tend to diminish frustration, reduce the feelings of inadequacy which is so common in this group and so increase the individual's self-esteem.

It is also the opinion of the authors that special studies are needed to develop special teaching methods with children who, even in the first grade, are already showing the "tendencies" and that these methods must cater to the "practical" reading which would be required for "action" activities.

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Bond and Tinker, Reading Difficulties, New York: Appleton-Century-Crofts, Inc., 1957.
Blanchard, P., Reading Disabilities in Relation to Maladjustment, Mental Hygiene, 1928, 12, 772-778.

● **Intensive psychiatric treatment can be helpful in severe psychiatric disturbances in children.**

INTENSIVE TREATMENT FOR ACUT
PRE-PSYCHOTIC, AND PSYCH

Louis J. Kowalski, M.D.*

The need for special facilities in which children with severe emotional disturbances might be treated away from the pressures of family and community was recognized several decades ago. Private and later public facilities for this purpose were developed. Some child-care institutions, organized earlier in the twentieth century for custodial purposes, in the past fifteen or twenty years have changed in function to serve the psychiatric needs of children and youth.

The State of Delaware about fifteen years ago, in planning for the social and welfare needs of its citizens included in the original design for the Governor Bacon Health Center "a department for the care and treatment of children between the ages of three and eighteen years, who are either seriously maladjusted or mentally ill and who are amenable to modern care and treatment."[1] Soon after the Center opened in 1948, the inadvisability and extreme difficulty was demonstrated of trying to treat children with psychoses or severe emotional disturbance in the acute stage and children—in the same residential unit— who were mildly disturbed. It was necessary to state in the criteria for eligibility for admission the following restriction regarding children with "problems growing out of hostility and aggression which cannot be contained in the home, school, or wider community."

"If the child has sufficient ego strength to warrant help and his behavior is such that it does not require maximum security, he is accepted on a provisional basis to test his ability to fit into our environment. However, not over five per cent of the population of the Center can be made up of children in this diagnostic category and the ages must be dispersed in the age range 7 to 13."[2]

During the years in which the Governor Bacon Health Center has been providing residential care and treatment for maladjusted children, the need for separate facilities for extremely disturbed, pre-psychotic, or psychotic children became more apparent and insistent. In the fall of 1959, therefore, the State Board of Trustees approved the establishment of a psychiatric unit at the Governor Bacon Health Center for the treatment of acutely disturbed pre-psychotic, and psychotic boys and girls. This facility is in the Tilton Building, the main hospital building.

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*Medical Director and Assistant Superintendent, Governor Bacon Health Center.

TURBED,

LDREN

The boys' unit was opened on November 9, 1959. This facility comprises two single rooms, one room with three beds, a ward of five beds, a day room area, and a bathroom. It is located on the first floor of the South Wing of the Tilton Building. It provides beds for ten boys.

On February 12, 1960, the psychiatric unit for girls was put into service. This unit is on the first floor of the Tilton Building in the North Wing. The unit consists of a dormitory room with four beds, two single rooms, and a day room. Bath facilities are adjacent to the unit.

Both units are staffed with 24 hour attendant service (three eight-hour shifts for each unit). One charge-nurse supervises both units. The Acting Clinical Director is the physician responsible for the Psychiatric Unit. She visits each unit twice a day routinely and more frequently as needed. The Center Pediatrician, the other physicians in charge during the evening and night shifts, and the Consultants give service to these patients as needed. The visiting child psychiatrist makes rounds in the units once a week. He has some of these patients in individual or group psychotherapy. The Social Service and Psychological Divisions also work with individual patients of these two units or with groups of them. One recreation worker is assigned to the Psychiatric Unit and provides activities for them in the Unit or out of doors. All activities of the children in the Psychiatric Unit "are governed by the express orders of the physician in charge." Daily orders are posted. Teachers take school assignments to the children when their condition does not permit them to attend the regular classes. As often as the present emotional states of these children permit, they participate in the church, school, and regular recreation activities of the Center. According to the orders of the physician in charge of the Unit, the children leave the unit under escort of an attendant, recreation worker, teacher, or a member of the psychiatric staff or unescorted, provided the Charge Nurse has issued a pass to the child who has been permitted by the physician to go unescorted. Children who do not desire to participate in an activity, are permitted to remain in the Unit. An effort is made, however, to motivate them to participate if they are not too disturbed for group activity. Two of the older girls and one boy are in a vocational training program as a part of their therapy. One girl is training with the hairdresser for the Center. The other assists in a class for trainable mentally retarded children in the Convulsive Seizure Unit. The boy is training under one of the mechanics in the Maintenance Division.

The patients in the Psychiatric Unit receive visitors on Saturday between 1:00 and 3:30 p.m. Various civic groups have sponsored parties and other entertainment for the children in the Unit. Each day room is furnished with a television set. Books, magazines, puzzles, and various games are available for use in the day or other rooms, as the children desire. Every effort is made to interpret to the patients the special purpose of these facilities to eliminate any feeling of rejection on the part of these children in not living in the cottages.

A psychiatric staff meeting is held once a week in the solarium adjoining the boys' unit. The Medical Director and all personnel working with the individual patient presented attend. The purpose of this staff meeting is to observe the condition and progress of the particular patient, to make a diagnosis, review the treatment program, make recommendations for continuing treatment, help plan for the child's transfer from the unit to a cottage or discharge directly from the unit home or to some other placement.

The following admission procedures were established by the Superintendent for the Psychiatric Unit and are in force. The availability of a bed in the appropriate unit is always a primary consideration for admission, of course.

1. A child may be admitted when there is no immediate urgency but admission to the psychiatric unit is recommended by the Mental Hygiene Clinic or private psychiatrists who have evaluated the mental status of a pre-psychotic or psychotic child and feel that he will be benefited.

2. In urgent cases in which a psychiatric problem is present the Court or State Department of Public Welfare may request emergency evaluation by the Mental Hygiene Clinic. This agency may then recommend immediate admission to the Psychiatric Unit.

3. A disturbed, pre-psychotic, or psychotic child who is not delinquent may be admitted to the Psychiatric Unit of the Governor Bacon Health Center without the evaluation of the Mental Hygiene Clinic if the referral is made by the Court or any social agency. The child received under this type of referral will be admitted for diagnostic and therapeutic purposes and not merely for observation, provided that the child is examined by the Medical Director or one of the staff physicians of the Center and the admission is advised by the examining physician. If the child's admission is not advised after the examination, it is the responsibility of the agency working with the child to make other arrangements for his placement.

4. A child who needs intensive treatment and maximum security for a psychiatric problem may be admitted directly to the Psychiatric Unit at the Governor Bacon Health Center without previous evaluation. The State agency or facility working with the child must agree to assume responsibility for the child's placement elsewhere, if the evaluation of the Center Staff indicates that treatment in Psychiatric Unit is not feasible. The immediate transfer of children to the Psychiatric Unit for diagnosis and treatment of their psychiatric problems may relieve another State facility performing child care functions.

5. Any child newly admitted or already in residence in any other unit of the Governor Bacon Health Center may be transferred immediately to the Psychiatric Unit, at least on a temporary basis, if he manifests psychotic or emotionally disturbed behavior of a serious nature.

6. Children receiving shelter care will be transferred to the Psychiatric Unit, if they become mentally or seriously emotionally disturbed. Notice of such a transfer will be

given to the State Department of Public Welfare.

From November 9, 1959, when six boys were admitted to the boys' section of the Psychiatric Unit, through August 31, 1960, a total of 33 boys had been treated in the Unit. In the period from February 12, 1960, when the girls' section was made available, and the somewhat later date when the first two patients were transferred there, 14 girls have been in residential treatment. Some ten boys have been treated in the Unit, transferred to a cottage, and later returned to the Unit from the Cottage System. One of those in the Unit, on August 31, 1960, had been transferred to a cottage twice, before being returned to the Unit for the third time. Five of those still in the Unit as of August 31, 1960, including the boy mentioned above, had been transferred to a cottage and back to the Unit at least once. One of the boys remaining in the Unit has been there for six months. The Unit seems to be meeting the needs of this boy better than the cottage did in the several years he had been in the Center prior to the opening of the Psychiatric Unit. A boy who had been one of the original six children admitted to the Unit went home on trial visit directly from the Unit after being treated there for nine months.

Among the girls treated in the Unit is one who was in the first group admitted. She still remains in the Unit. There has been only one girl who has been transferred out of the Unit and has been returned to it. The five girls remaining in the Psychiatric Unit on August 31, 1960, had resided there continuously from their admission to the Unit. Two were patients who had been patients in the Maladjusted Children's Unit some time before. One was returned from Trial Visit and admitted in the Unit. The other had been discharged from the Maladjusted Unit twice and from the Shelter Care Unit once.

Among the boys treated in the Psychiatric Unit the problems have been principally severe hostility and violent aggression against others; chronic running away from home and truancy from school; destructive behavior; threats of physical violence against others including homicidal threats; serious behavior problems including breaking, entering, stealing, and vandalism. There have been schizophrenic boys in the group and several with schizoid personality.

Among the fourteen girls treated in the Psychiatric Unit has been a girl who has shown homicidal tendencies and considerable confusion concerning sex identification. Three have made suicide attempts. Two are definitely schizophrenic. Several have been acutely disturbed and belligerent in the cottages in which they were living. Two seriously disturbed girls were acting out their problems through sex activity. Progress has been observed in some of the girls who have been patients in the Psychiatric Unit. It seems, however, that most of the girls who have been admitted in the Unit are suffering from deep-seated serious mental illness. With several notable exceptions, the boys treated in the Psychiatric Unit have been acutely disturbed in their cottages, but their problems have been less indicative of psychosis than of emotional disturbance.

It has been gratifying to observe how some youngsters who were evaluated as prepsychotic on admission have responded to the intensive therapy made available in the Psychiatric Unit. Several such persons, particularly in the boys' unit, have been able to maintain themselves satisfactorily in the cottages after several months in the Psychiatric Unit. There is, of course, much to be learned regarding the most effective techniques of treatment and the types of cases which can be treated successfully in this kind of a facility. It is hoped, however, that as the months pass, the service rendered by the Psychiatric Unit, in terms of the number of youngsters who are helped to move toward wholesome personality integration in the formative years of their lives will justify the expenditure of funds and of the skills and knowledge of professional personnel.

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1. Delaware Code, 1953, Title 16, Part V, Chapter 53, Subchapter 2, Section 5321, Paragraph (1).
2. James A. Flaherty, "The Organization Of The Residential Treatment Center At Governor Bacon Health Center, Delaware State Medical Journal, Vol. 26, No. 8, August 1954, p. 186.

FATALITIES

During or Following FLUPHENAZINE THERAPY

● **Symptoms due to drug toxicity frequently are confused with unrelated factors during fluphenazine therapy.**

Kurt Anstreicher, M.D.*

Until now 71 patients at the Delaware State Hospital have had 78 courses of Fluphenazine therapy. Two preparations of the drug have been used: Prolixin (Squibb), (35 first and 3 repeat courses) and Schering 6894, an experimental drug of the same formula now marketed as Permitil (White Laboratories), 36 first and 4 repeat courses).

Two of the 71 patients died less than 24 hours following termination of neuroleptic therapy. My report is prompted by the apparent fact that few, if any, deaths have been recorded in connection with the use of this drug.

Case I

A 29 year old woman entered the State hospital on December 1, 1958. Medical commitment papers mentioned confusion and disorientation, flight of ideas, delusional ideation and occasional spells of assaultiveness. She had been at a general hospital since November 27.

History

Both parents alive; quiet, reticent, intensely religious people. Father sober and industrious, suffers from arthritis. Patient is the third of five children; siblings healthy. *General family history:* One sister of patient's father has been a patient in this hospital (paranoid condition, paranoid state; differential diagnosis: schizophrenic reaction, paranoid type). Mother's pregnancy uncomplicated; patient was born, full term, May 22, 1929; early development normal, toilet training accomplished at two years of age. To prevent nocturnal enuresis, the patient was taken up at night routinely. Severe nail biting present for many years, but not lately. All children had strict religious training, family ties were close. In High School the patient was an average student, was shy, did not participate in extracurricular activities, had only one or two girl friends.

Patient has always been shy, reticent, serious-minded, highly sensitive. Extremely mild tempered, cried when angered; honest, obedient, nonconfiding. Had few recreational outlets, attended church and Sunday School regularly.

In 1953, after a courtship of only two months, patient eloped from home to marry a man of different faith. The marriage was utterly unhappy; husband was impulsive and destructive, drank, failed to support family, patient had to work throughout her pregnancies; late in 1956 their home was lost, shortly later they separated, and went to live wih their respective families. In November 1957, patient's husband was admitted to this hospital, is still in the hospital; diagnosed schizophrenic reaction, simple type. There are two children, a boy 3 and a girl 2 years of age. The patient's second labor was difficult (low transverse Caesarian section for complete placenta previa).

Measles, mumps, chicken pox, whooping cough in early childhood overcome without complications. Patient has always been overweight (as were patient's father and sisters.) In 1955 she weighed

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*Acting Clinical Director and Acting Director of Research, Delaware State Hospital

225 lbs., weight at the time of admission here was 205¾ lbs. (Height 5'3"). In recent years patient craved sweets, was unable to adhere to any diet prescribed for her. Rapidly progressing arterial hypertension at least since 1953. The mean systolic/diastolic blood pressure values in 1955 (from 3 readings) were 156/95.3 mm. Hg.; in 1956 (from 43 readings) 144.3/82.5 mm. Hg.; one reading in 1957 was 170/100 mm. Hg.

Menarche at 12 years, menses occasionally heavy. During recent months patient complained about feeling dizzy at onset of menses. Last month, violent headaches premenstrually. Last period a few days overdue when the patient entered the hospital, but started following admission.

Occupation: Patient has worked in two jobs, was an excellent, appreciated worker. Alcohol never used.

Onset of Illness: On November 24, 1958 patient took her daughter to the physician and, at the same time, again discussed her own problems of obesity and hypertension. Her blood pressure then was 180 mm. Hg., systolic. Physician gave patient a d-amephetamine compound (patient had used same medication 3 months before). The physician noticed that the patient was unusually garrulous and that she had developed paranoid notions regarding co-workers, employer and others. Her mother related that the patient had become increasingly critical of the home conditions.

On the 26th, in the evening, she refused her meal, appeared excited, overtalkative and restless. Found awake at night, she appeared irrational, rambled about people she had known in the past. The physician was called, she received Thorazine medication, 25 mg., slept a few hours, then continued to be overtalkative and rambling, finally became very loud and at that point was sent to the general hospital.

The patient's general practitioner feels that the patient, in fact, has been increasingly psychotic for two years, approximately. He mentions increasing suspicions and unrealistic persistent fantasies of pregnancy.

She entered the general hospital on November 27th, appeared confused, disoriented, talked continually, sang religious songs, appeared restless and nervous, mentioned fear of pregnancy and spoke of having "seen the light." She was noisy at times, refused meals, required heavy sedation and Thorazine medication (50 mg. t.i.d.).

The patient's condition precluded intensive studies, but a urinalysis, November 27th, gave the following findings: Specific gravity 1,027, Albumin 3+, Sugar negative, Acetone 3+, few White Blood cells and Hyaline casts per field. A blood count read: Hb. 109%, 17.0 gram, White Blood count normal. The blood pressure reading had been 160/110 mm. Hg. The patient was seen by a staff psychiatrist and her transfer to the Delaware State Hospital was arranged.

Course in Hospital

Admission physical examination was negative except for obesity, intertrigo of lower abdomen, cutaneous infection near the left hip, blood pressure 180/90, slurred speech (sedation). The mental examination showed the patient at first uncooperative. She was not overactive, attention span was short, she appeared confused and disoriented in time. Later on she was histrionic, flighty, there was pressure of speech; she was emotionally labile, changing quickly from cheerfulness to seriousness, to anger; she was affectively blunted, laughed and cried. She appeared delusional, preoccupied with sexual problems, which she discussed unduly freely, had incest fantasies, and was hallucinated ("God had talked to her" for some time).

The initial differential diagnosis included diagnoses of Schizophrenic Reaction, Hebephrenic Type, and Manic Depressive Reaction, Other (Mixed) Type.

Lab studies: Blood sugar: 127 mg. %; Blood urea nitrogen: 11.5 mg.%; Blood count: normal; Cholesterol: 225 mg. %; Glucose tolerance curve: fasting, no specimen; 30 minutes, 209 mg.%; 1 hour, 238 mg. %; 2 hours, 251 mg. %; (urine 2+ for sugar); 3 hours, 238 mg. %; W.R.: negative; Lumbar puncture: normal findings. On December 8th another fasting blood sugar level was read at 134 mg.%.

The patient was started on a course of Fluphenazine medication (Prolixin) on December 4th. She received 5 mg. b.i.d., i.m., until and including the morning of December 8th, altogether nine injections.

Her mental condition changed as follows: December 4th: Loud, tearful, flightly, overtalkative, denudative, untidy at times, misidentifies, has religious preoccupations, kneels on the floor, hears voices, refuses her meals, but takes fluids well, remains awake part of the night. December 5th: Still overtalkative, loud, flighty, sings and cries, bangs doors, disrobes, shows religious preoccupations, refuses meals, but takes fluids, remains awake part of the night, but is quiet. December 6th: Noisy, confused, untidy, takes only fluids, more quiet in the afternoon, sleeps most of the night. December 7th: Mildly restless, but drowsy, tends to lie around, appears confused, refuses her lunch, sleeps at intervals.

Morning blood pressure readings from December 1 to December 7 were as follows: 180/90, 130/80, 210/110, 160/90, 180/110, 190/150, 160/118 mm. Hg.

On December 8th in the morning, she was found semi-stuporous, in shock, blood pressure not measurable. Drug therapy was discontinued, she was transferred to the sick ward, and was seen by internists and surgeon. She received the following treatment: External heat, oxygen, continuous intravenous infusion of 5% dextrose in saline, levophed, caffeine sodium benzoate, heparin, penicillin. In the afternoon her temperature went up to 100° and the blood pressure with levophed was maintained at 120/108. Both lower extremities, more so the left, appeared cyanosed, cold, and the patient complained of pain in her legs. At 7:15 p.m. she was transferred to the general hospital.

Course at the general hospital: Admission findings at the general hospital were: Variable, feeble pulse; tachycardia, 120 per minute; pulse regular; skin cold and clammy; patient able to respond to questions; no CNS localizing signs; abdomen, lungs heart: negative. Blood count: Hemoglobin, 127%, 19.9 gram, White blood count, 28,500/cmm. (polys 75%, bands 21%, lympho 1%, mono 1%). Urinalysis: Color, light brown, cloudy; Albumen 4+; Sugar, acetone negative, Red blood cells 10 - 15/HPF, White blood cells 4 - 8/HPF; many coarse casts, bacteria.

The patient was continued on levophed and in addition received streptomycin, achromycin and hydrocortisone (100 mg. q.i.d.). At 10:00 p.m. TPR's were 103.4°, 144/min., 30/min., on December 9th at 4:00 a.m. the corresponding findings were 105.4°, 130/min., 40/min.

The patient did not respond to therapy and expired on December 9th at 4:30 a.m.

Autopsy findings: Kidney: acute proliferative glomerulonephritis; Lungs: acute interstitial pneumonitis, focal intra-alveolar hemorrhage; Adrenals: medullary hemorrhage; Liver: fatty changes; Brain: congestion; Heart: congestion, hypertrophy, perivascular fibrosis.

Final diagnosis and cause of death (general hospital) were: Peripheral vasular collapse, possibly secondary to drug idiosyncrasy, Acute glomerulonephritis. Final diagnosis (Delaware State Hospital) was: Schizophrenic Reaction, Schizo-Affective Type.

Case II

A 39 year old woman entered the Delaware State Hospital on January 31, 1960. Medical commitment papers mentioned death of the mother six weeks before, the patient trying to settle the estate and becoming upset about this. Two days prior to admission acute excitement, exaltation, hallucinations, delusion, feelings that things were strange, and misinterpretations.

History

Patient of Italian descent, father poor earner, irritable, died four years ago, having had several cerebral strokes and having suffered from rheumatism for a number of years. Mother died from cancer. Children were closer to her. Had a short lasting breakdown at age of 42; said to have been irrational for 3 weeks, but was not hospitalized. Patient the seventh of nine siblings, two of whom had died young, prior to patient's birth. Oldest living brother released from service for reasons of mental ill health. He spent one month at a V.A. Mental Hospital. Diagnosed: Schizophrenic Reaction, Simple Type. Youngest sister patient in this hospital from 1948 to 1952 (Schizophrenic Reaction, Hebephrenic Type). Paternal uncle mentally disturbed, had treatment in Europe.

Patient born on February 25, 1920, full term. Early development normal. Patient graduated from High School, average student.

Patient was quiet, though not shy. Met people readily, was relaxed and casual, cheerful, good sense of humor. Not secretive, but able to work out her own problems. Fairly independent, slightly stubborn. Religious. Good housekeeper.

She married in 1941, had 3 healthy children. Marriage was very happy. Her health had been good. Menarche at 11, periods lasted 8 or 9 days.

Onset of illness: At mother's funeral patient looked "stoney." Later on functioned somewhat "automatically." A few days ago, attempting to settle her mother's estate, she became agitated, depressed, and sleepless, was found kneeling on the floor, accusing herself, thought her mother was still alive, that the Lord was talking to her. Voiced long buried guilt. Three days ago became panicky and excited, aggressive towards her husband. After one night of continued crying and screaming admitted to a general hospital and committed to the State hospital.

Course in hospital

Admission physical findings: Patient resistive to examination, unkempt in appearance, skin pale, blood pressure 148/90, other findings normal. Mental examination: Patient withdrawn, seclusive, unfriendly, manneristic, resistive, refusing to answer questions. Appears preoccupied, worried, depressed. Remained mute, except for the remark "I want my mother."

Lab studies: Urinalysis: negative; Blood sugar: 97 mg. %; Blood urea nitrogen: 12.5 mg.%; Cholesterol: 261 mg. %; Blood count: 3,257,000 red blood cells, Hemoglobin 61.9%, 9.6 gram, White blood count, 6,400; Alkaline serum phosphatase: 3 Bodansky units/100 ml; W.R.: negative.

The patient remained severely excited, screamed, laughed and danced, ran up and down the ward. At other times she was in semi-stupor, spoke in whispers, appeared preoccupied with religious ideas, and was found in praying positions. At times she would sink to the floor and remain there motionless. She seemed to answer to hallucinations "I did not commit adultery."

A tentative diagnosis of Schizophrenic Reaction, Catatonic Type was made and on February 2nd she was started on medication with Fluphenazine (Schering 6894), 4 mg. b.i.d., i.m. (she also received iron for anemia).

February 3rd: Patient described as lying on her bed in semi-stupor, to whisper inaudibly. At times still disturbed, but easier to manage. In the afternoon dyskinetic reaction (protrusion of tongue, rigidity, periods of screaming), evening dose of medication withheld. February 4th: Similar dyskinetic reaction following morning dose of medication. Seen beating her thigh with clenched fists, her lips drawn back, makes peculiar groaning noises. From time to time these symptoms will pass off, her eyes open and one is able to communicate with her. She then states that she hears the voice of God and that she has committed a great sin. Later in the morning she receives Akineton, 5 mg. intravenously, and responds with complete relaxation, converses normally and plays the piano. Three hours later again dyskinetic. On February 5th and the following days continues to show features of marked catatonia. February 8th: Again semi-stuporous, disinterested, in bed in deep catatonic stupor, waxy flexibility, features immobile, slight coarse tremor of head; takes food and fluids reasonably well, but has to be spoon fed. Following another injection of Akineton, facial features loosen "I feel like I am coming back into the world." Two hours later possible to take her for a walk; upon return felt that she had not enjoyed it. Dosage of medication increased to 6 mg., b.i.d., i.m. February 9th: Severely cataonic, lying in bed, odd noises being the only response. No rigidity or waxy flexibility; requires spoon feeding, but eats well. Spends some time in the day hall, sitting quietly and inactively, remains mute.

On February 10th at 7:00 a.m., patient was found dead in bed. She had been seen alive last at 4:00 a.m. the same morning, asleep, and apparently in satisfactory condition. When found dead, the patient was in prone position, her face pressed against the pillows, all muscles rigid, arms flexed at elbows, the legs extended, no marks on her body. All dependent parts of face and body were livid in color; the tip of the tongue was caught between the teeth, blood tinged mucus had drained from the mouth and had stained the pillows. The total picture suggested death during or following a convulsive seizure.

Autopsy

Medical examiner's autopsy revealed: 1+ pitting edema of the ankles, a small heart, congestion of the lungs; Liver small and congested; Brain 1,250 gram, pressure cone, pituitary gland slightly enlarged, mild cortical atrophy of both frontal lobes, diffuse congestion and prominence of small vessels throughout the brain, and a small (2 mm. diameter)) punctate hemorrhage in the right dentate nucleus. A residual thymus (4 x 2 x .8 cm.) was present.

Our final diagnosis in this case was, for the patient's mental illness, Schizophrenic Reaction, Catatonic Type, and as to the cause of death, Cerebral Edema and Congestion, Catatonic Schizophrenia with Convulsive State.

Discussion

Deaths in relation to Fluphenazine therapy are rare. The Medical Departments of Schering Corporation, Bloomfield, New Jersey (Schering 6894), Squibb Institute, New Brunswick, N. J. (Prolixin), and White Laboratories, Kenilworth, N. J. (Permitil) have no knowledge of additional cases.[1,2,3]

In both cases reported in this paper it has been difficult to evaluate the relationships between fatal outcome, pre-existing physical illness and therapy with neuroleptic drugs.

In Case I the patient no doubt was physically (and possibly also mentally) chronically ill. She had been extremely obese and increasingly hypertensive for many years. She probably had developed mild diabetes mellitus. There is also evidence for kidney disease of some standing. Hospital records of 1956 and 1957 contain reports of negative urinalyses. Prior to admission to this hospital the urine showed Albumen 3+ and contained casts.

The main findings at autopsy were acute proliferative glomerulonephritis and pneumonitis. During, but not necessarily because of, her course of neuroleptic medication an acute exacerbation of a previously present kidney ailment may have occurred. Nevertheless, the final reasons for the patient's suddenly developed and profound state of irreversible vasomotor collapse shock) are not fully understood. One might assume that the added stress of neuroleptic medication upon an already overloaded entonomic nervous system, led to irreversible entonomic imbalance and final loss of homeostasis.

Fluphenazine is not known to produce kidney complications. Very occasionally, kidney pathology was found in experimental animals to whom high doses of the drug had been given over prolonged periods of time; these findings probably having been incidental.[4] At one time there was also some suggestion that under treatment with Fluphenazine elevation of blood urea levels had occurred. This singular observation was, however, not confirmed.[5]

In Case II, nature and mode of death are not fully understood and evidence for death in or following convulsive seizure is slightly circumstantial. To the best of our knowledge the patient had had no seizure prior to her course of drug therapy and death, respectively.

While many neuroleptic, and other psychotropic agents, are known to produce seizures occasionally, notably so Promazine, but also Vesprin, Chlorpromazine, Perphenazine, Serpasil, Imipramine, and others, Fluphenazine has produced seizures infrequently.

Essential findings at autopsy in our case, were congestion and edema of the brain. The significance of the small intracerebellar hemorrhage is difficult to assess and may not be high.

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SUCCESSFUL TREATMENT OF SEVERELY DISTURBED CHILDREN

A REVIEW OF TWO CASES

Mary Nanigian, M.D.*

In the four years that the writer has been a member of the medical staff of the Governor Bacon Health Center, a number of interesting cases of seriously disturbed children have been admitted. Some have responded to the various types of treatment available and have been able to maintain themselves in the community. Two of the most interesting patients with whom I have worked were boys with very serious, deep-seated problems. One was diagnosed as sociopathic personality disturbance, sexual deviation, with psychotic reaction, mental deficiency, mild. The diagnosis on the other was psychoneurotic reaction, obsessive-compulsive reaction. After intensive treatment both were placed on trial visit and were finally discharged. This report will present information concerning the presenting problems and the treatment of these two children.

Case No. 1

This patient was a 14 year old boy at the time of admission to the Governor Bacon Health Center. He was referred by a local child psychiatrist who described the child's difficulty as "a problem in identification with effeminate mannerisms, possibly overt homosexuality and occasionally stating that he is having a baby." He had been released from school to receive psychiatric treatment because of his strong effeminate characteristics.

This boy was born when his mother was 15 years old and the father 16 or 17. One sibling, a girl, is two years younger. The marriage lasted three years. The father was in the Service during about half of the marriage but allegedly was frequently at home. He became involved with the law and served a prison sentence. The boy was eight years old when the father was released from prison. The family lived with the maternal grandparents both while the marriage lasted and afterwards. The mother remarried during the year her ex-husband was released from prison. The stepfather legally adopted the two children. They have continued to live with the maternal grandparents.

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The boy was over-sheltered and over-protected. He identified strongly with adults, especially women. He enjoyed cooking. He was very clothes-conscious and particular about his clothes. His mother stated that he had begun to want to wear clothes "like some of the homosexuals do." He was reluctant to expose his body and had been returned from camp the summer before admission because of problems connected with undressing, bathing, and the like with the other boys. Also, at times he reputedly grabbed his abdomen in pain, exclaiming that he was going to have a baby. No matter how hot it was, he would insist on sleeping under a cover, a blanket, until his mother packed it away.

He was ridiculed by his peers because of his feminine gestures. He was increasingly suspicious of people, wondering if someone was talking about him. He was becoming withdrawn and wanted to stay in his room, all the time. It was difficult to persuade him to bathe.

According to the mother, the boy was a full-term baby, delivered by forceps. He was weaned rather late and at two years of age kept taking his baby sister's bottle. He walked at about fifteen months of age. He did not talk until he was about three years old. He began to stutter at the time speech was developing. He was not completely toilet trained until he was five, although the training was started when he was nine months old. He was said to have occasional bowel accidents when he was twelve years old. Also he was enuretic until he was 11 years old.

Referred for Speech Therapy

When the child was five years, he was referred to the Mental Hygiene Clinic for speech therapy, also because he was a behavior problem at home and at kindergarten. He was described as having temper tantrums, screaming, stamping his feet, crying for hours, also being "disobedient, sassy, and destructive."

He was examined in the Mental Hygiene Clinic at the end of the school year prior to his admission at the Governor Bacon Health Center. At that time he was diagnosed as a schizoid personality. His feminine identification was noted.

Disturbed Mother

Perhaps of some significance might be the history of disturbance in the mother, who was described as a very anxious person. She had received psychiatric help for tantrums and for occasional alcoholism. A maternal aunt was reputedly mentally ill but never hospitalized.

On admission to the maladjusted children's unit, this lad was found to be well-built but overweight. Hair growth and genital development were relatively normal for his age. The endrocrinologist who examined this patient reported, "He has marked increased hair markings which is observed in this type of case. In these patients there is a possibility, if not a probability, of converting their adrenal hormones into female type hormones."

He exhibited marked female tendencies in his gait, gestures, and speech. He also showed some symptoms of being withdrawn and suspicious. After the routine admission examination, he asked if the results of the examination would be broadcasted.

He wore very tight fitting trousers. He asked the attendants for sanitary pads and brassieres. At times he wore bright colored streamers of crepe paper around his neck. He wore his hair somewhat long and frequently had a pencil sticking in it.

Psychological testing indicated that this boy was functioning intellectually at the borderline level. According to academic achievement tests he was retarded in all areas. His performance on the projective tests indicated that he had a good deal of confusion and disorganization but was maintaining himself at the neurotic level.

He was kept in the main hospital building in the admissions unit for one year. There had been some question as to whether he should not be transferred to the Delaware State Hospital. He was evaluated by the Superintendent. Since the boy was not a management problem, however, the Superintendent advised that he remain at the Health Center in intensive therapy. His general behavior was satisfactory. He was polite, courteous, and coooperative.

He attended school on the grounds and recreation activities with the children in the cottages. The writer saw the boy daily regarding current problems. Twice a month a visiting child psychiatrist worked with him. The Chief Psychologist had eighteen psychotherapy sessions with the patient over a six months period.

Medically he received Thorazine Spansules in various dosages practically throughout his hospitalization. On order of the Endocrinologist he received Methyl Testosterone, 10 milligrams daily for three months. Although the Endocrinologist was not ready to discontinue this medication, he did so because of the patient's suspicious attitude.

The boy had been the butt of much teasing and ridicule from his peers at school and in the recreational areas. At first he became quite disturbed. He feared physical combat, however; therefore, he never attacked the teasers.

Improvement Shown

Gradually he adopted clothing which fitted properly and was less conspicuous than formerly. He apparently lost his delusions of feminine identification for he ceased to talk of menses and of having a baby. His feminine gestures decreased, and he became better adjusted to male manners of bathing and toileting. He improved in his school work and achieved at a higher level academically than his intellectual endowment indicated. His higher-than-expected scores "are assumed, in part, to be a reflection of the patient's improved emotional status."

At the end of a year his transfer from the hospital building to a cottage was recommended by the Staff and approved by the Superintendent. He lived in a cottage seven months. According to the reports of the houseparents, he adjusted satisfactorily although at first he sought attention and resented supervision. He continued to be teased to some extent by his peers, but they seemed to accept him satisfactorily.

After Staff evaluation, he was placed on trial visit at home and continued to see the writer on an out-patient basis. He was seen seven times within eleven months after trial visit status began. At the end of one year he was discharged from the Health Center records.

During the trial visit period, he attended the Opportunity Center in Wilmington, and completed a ten weeks course in carpentry. He worked at the Opportunity Center for several months and left this employment when he received a job as a handy man in one of the general hospitals at a higher rate of pay. He continued in this employment until recently. A statement made by the youth's mother in a telephone conversation with the writer seems to indicate the need of further psychotherapy.

It was the consensus of the persons who worked with this boy that his problems are so deep that the hope of really eliminating them is meagre. He apparently gained sufficient insight and ego strength to accept the conventions of society, however. It may be necessary for him to have some supportive treatment occasionally through the years to help him meet the stresses created by the reactions of society.

Case No. 2

This boy was born in 1948 and was referred by a local psychiatrist to whom he had been taken when his school adjustment became unsatisfactory and his symptoms severe. In school he was doing above average work until the precipitating event. He was unable to concentrate and was frustrated and hysterical. The incident which preceded the onset of the presenting problems was his breaking the Communion fast, then taking Communion. When his deception was discovered, he became hysterical. He developed hallucinations of God and the devil. Although the child had always exhibited some fears such as demanding to sleep with a light in his room and having his brother accompany him to the bathroom after dark, his fears increased. He became extremely fearful of disease and at times was hysterical, stating that he was dying from cancer, tuberculosis, brain tumor. Physical examination showed him free of disease of any kind. He was often afraid to eat because "food contains poison." He thought people were out to kill him.

According to the mother, the boy was always withdrawn and uncommunicative, seldom confiding in anyone. Although he had a normal birth and was apparently healthy, the child is said to have cried a great deal and to have slept poorly. Allegedly the parents took turns walking with him or pushing him in a carriage all night. His physical development was normal in all respects. He was never able to amuse himself.

The second sibling, a girl, was born when the patient was almost two years. The third child, a boy, was born two years later. According to the mother, the patient never exhibited any jealousy towards his siblings, but he demanded attention.

Paternal History

The child's paternal family history is quite interesting. The paternal grandfather died of coronary thrombosis in a mental hospital after residential treatment of 14 years. His diagnosis was dementia praecox paranoid, with mental deficiency, moderate. The paternal grandmother had been chronically ill with high blood pressure and died quite suddenly when the patient was eight years old.

The maternal grandmother had a heart attack when the patient was seven years old. Since then she had been unable to stand the noise and confusion of the children and was fearful of dying.

The patient's father reputedly was nervous and unhappy at his work. He had been under the care of a physician for high blood pressure since the month of the boy's breakdown. According to reports, the father is fanatical about his religion.

The mother was suffering from emotional disturbance herself and had been a patient in a mental hospital briefly. When the child was admitted to the Governor Bacon Health Center, the mother talked considerably of her own numerous ills.

Admission Examination

The admission physical examination showed a well-built and well-nourished boy. The laboratory findings were all within normal limits. He was quiet and mentally alert.

According to the psychological tests administered to the child, he was functioning within the average range of intelligence. His academic achievement was very close to the level of expectation. There was indication of marked anxiety and some suggestion of difficulty in concentration. His intellectual range probably would have been indicated at a higher level if he could have functioned without emotional disorganization. The projective test results showed evidence of a personality pattern disturbed by "defensive compulsivity and a fear of rejection." It was the opinion of the psychologist who examined the child that the defenses which the child had developed did "not adequately defend against panic reaction and behavioral manifestations periodically became acutely disturbed." There was evidence in the child's Rorschach responses of "a borderline or prepsychotic condition."

He was retained in the main hospital building in the admission unit approximately three weeks, as it was thought unwise to place him in a cottage with the other children until some of his acute problems had been worked through. He talked quite freely to the writer, admitting that he could not control his thoughts and was cursing the Lord. He said that he constantly prayed for forgiveness, but he felt that he was constantly committing sins. He admitted masturbation and felt that the Lord would not forgive him for this "sin." He had obsessive thoughts which he called "dirty thoughts." These thoughts had sexual content like nude women, women's breasts. He also had repetitive dreams of nude women. He had auditory and visual hallucinations such as hearing condemning voices and seeing God and the devil. He had obsessions of a religious character like cursing God's name. He tried to keep these obsessive thoughts under control by such compulsive acts as counting, repeating numbers, praying, washing his hands frequently.

He was seen daily by the writer. Several times a day he would call to this physician as she passed the ward and in tears would tell her of his "bad thoughts" and the "sins" he had committed. He was seen four times by members of the Psychological Division for psychotherapy and evaluation. The visiting child psychiatrist worked with him three times. He received small doses of Thorazine for the greater part of the time he was at the Health Center.

During the time the child was in residential care, the Social Service Division worked with the parents to relieve the religious pressure of the parents. Plans were also made for his transfer to a public school from a parochial school.

The child was removed to a cottage where he made a satisfactory adjustment. In fact he was never a problem in either the school or cottage. He was cooperative, polite, and courteous at all times.

His symptoms subsided, and he was cheerful. He slept and ate well, but worried frequently and occasionally had "nervous headaches."

He was placed on trial visit at the end of the school year, having spent 3½ months in treatment at the Center. He continued in psychotherapy on an out-pateint basis with the writer and had 13 sessions over a ten months period. The writer also saw both parents regarding the child's progress. She also helped them with some of the religious conflict which involved the father's fanatical religiosity and the mother's apparent negligence of her "religious obligations." He was discharged one year after his trial visit status began.

In the early months after the child went home on trial visit, the mother reported that he occasionally woke during the night crying and saying he was afraid of God. Later these fears seem to have disappeared. According to the boy, he prayed in the morning and at night. He attended church regularly but was not so concerned about "committing sins." His school work improved considerably. His teacher was quoted as remarking about the contribution the child made to the class through his participation in the school activities. A recent report from the mother gave no indication of a return of any of the symptoms. The child had been engaging in normal summer activities.

These two cases give evidence that seriously disturbed children can be helped by various types of psychotherapy in a residential setting. There is some suggestion also that out-patient psychotherapy can be used to shorten the time of hospitalization and assist the patient to adjust satisfactorily in the community.

GENERAL PRACTITIONERS AND INTERNISTS

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For further information write: Louis Shattuck Baer, M.D., F.A.C.P., 411 Primrose Road, Burlingame, California.

ANTICOAGULANT THERAPY

In the Presence of Pulmonary Venous Congestion

A NOTE OF WARNING

● Increased pulmonary pressure should make one unusually careful in the use of anti-coagulant drugs.

Roger H. Culpan, M.D.*

Anticoagulant drugs have been used in the treatment of patients with rheumatic heart disease complicated by multiple emboli since 1946, and numerous writers have reported favorable experience with this form of therapy.[1,2,3,4,5.]

In none of the published reports on this subject, however, has attention been drawn to any particular type of circulatory anomaly, in which anticoagulants are contraindicated. The following case history illustrates a hazard of anticoagulant therapy in a specific type of heart disease.

Case History

A 41 year old woman of European descent was admitted to the Delaware State Hospital on March 18, 1960, because of aggressive hypomanic behavior, following a cerebral embolus two years previously.

She had sustained an attack of rheumatic fever at the age of 6 years and an attack of "St. Vitus Dance" at 11 years. Thereafter she experienced no serious illness until the age of 39 years when she suddenly collapsed in a drug store (Jan. 1958). She was taken to the nearest general hospital where she remained unconscious for seven days and thereafter made a gradual recovery. While in the hospital she was found to be suffering from a fairly severe degree of mitral stenosis with auricular fibrillation and the acute incident was thought to have been an embolus to the left middle cerebral artery. A month after admission she returned to her home, but her husband noted a marked change in her personality. She was confused in her thinking and frequently used words incorrectly. She began to talk about dying and accused people of trying to kill her. During the subsequent months her mental condition remained much the same and she required constant supervision from her family. She received no medication at this time apart from Digitoxin 0.1 mg. daily.

In May 1959 she was admitted to another hospital with a two day history of intense pain in the left leg. On physical examination her peripheral pulses were all present and normal apart from those in her left foot and popliteal fossa which were equivocal. She was thought to have sustained an embolus to the left popliteal artery and it was decided to initiate anticoagulant therapy. She was therefore given Heparin and then Coumadin. The symptoms in her left leg completely subsided during the first hospital week, and after 20 days in the hospital she was discharged with a recommendation that Coumadin therapy be continued and that she have weekly checks of her prothrombin time. The prothrombin time on discharge showed her blood coagulation to be 22% normal. She continued to receive maintenance Digitoxin therapy in the previous dose.

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*Acting Senior Psychiatrist, Delaware State Hospital.

Thereafter the patient remained at home and had no particular physical symptoms apart from moderate effort dyspnoea and on one occasion an attack of paroxysmal breathlessness with slight haemoptysis. Her mental condition on the other hand grew progressively worse and during the month before her admission to this hospital she became acutely disturbed, careless in her habits and profane in speech, making many references to sex and sexual behavior without regard to persons or place. Committal to this hospital was necessitated when she called a detective asking for protection, since she was convinced that her husband was trying to kill her by mixing her medications.

On admission to the Delaware State Hospital she was elated, very distractable and rambling in her talk, describing with a good deal of anger her delusion that her husband was trying to kill her. She was able to name only one town in the State of Delaware, although she had lived in the State most of her life, and she could not name correctly such common objects as a ball point pen, fluorescent light, a set of scales and a telephone dial. She was however accurately orientated in time. She had no insight into her deficits and was quite unconcerned at finding herself committed to a mental hospital. She was thought to be suffering from dementia as a result of cerebral embolism. On physical examination she was noted to be in auricular fibrillation and had a small pulse, suggesting a rather low cardiac output. The blood pressure was 100/70. The cardiac apex was located just outside the midclavicular line in the fifth inter-space, and there was a palpable thrust over the right ventricle. The first heart sound was markedly accentuated at the apex and there was also a grade 3 apical mid-diastolic murmur accompanied by a thrill. A loud opening snap was audible over the entire precordium. The pulmonary second sound was split, the second component of the sound being accentuated. There were a few rales at both lung bases but there was no evidence of peripheral edema. Chest x-ray showed a heart with the typical configuration of mitral stenosis, and in addition the pulmonary vascular markings were unduly prominent, indicating some pulmonary venous congestion. An EKG confirmed the presence of auricular fibrillation but was not otherwise abnormal. On neurological examination she was found to have a right homonymous hemianopia, sluggish pupils, slight right facial weakness, a fast right biceps jerk and an equivocal right Babinski response. There was also evidence of incomplete motor and sensory aphasia, apraxia, alexia and there was some confusion of right and left discrimination. Her haematology blood chemistry, blood serology, urinalysis, CSF, EEG, and skull x-ray were all unremarkable. The prothrombin time was 16 seconds (Quick's technique) or 64%.

At the time of her admission to this hospital the patient was receiving Coumadin 7.5 mgm. daily as well as Digitoxin 0.1 mgm. daily. These medications were continued and on March 30, 1960 Thorazine was added in a dose of 75 mgm. I.M. t.i.d., in order to control her overactive behavior. Thereafter she became less talkative and lost all her paranoid ideas. On March 31, 1960 the dose of Coumadin was increased to 10 mgm. daily in view of the rather inadequate coagulation control on admission. On April 7th the Thorazine dose was changed to 100 mgm. t.i.d. by mouth and was continued at this level. On April 12th her prothrombin time was reported as 13 seconds or 100%, and for this reason Coumadin medication was increased on April 27th to 15 mgm. per day. On the day following this increase the prothrombin time was reported as 16 seconds or 64%. During the month of April the patient had no particular cardiac symptoms apart from occasional nocturnal dyspnoea.

On the evening of May 3rd, she developed a temperature of 100.4 degrees but no cause could be found for this. On the following morning she became dyspnoeic with a rapid pulse and cold extremities. Her chest was moist and she was spitting up small amounts of blood. The temperature was normal and the prothrombin time was 17 seconds or 52%. She was thought to be suffering from an attack of acute pulmonary edema complicating mitral stenosis with possible early pneumonia. She was treated with Aminophylline gr. 3¾ IV., Demerol 100 mg. I.M., Hydrodiuril 50 mg. P.O., Sodium Amytal grs. 3 P.O., Penicillin 600,000 units I.M., oxygen and venous tourniquets to all limbs. Following these measures her breathing improved and she slept for almost two hours. On waking up however, she was very dyspnoeic again and had become pale. Pulse was rapid and weak. While sitting up talking to the doctor, she suddenly collapsed and died.

At autopsy she was found to have a completely atrophic left temporal lobe due to embolus in the left middle cerebral artery. The heart was not significantly enlarged and all the valves were in good condition apart from the mitral valve which was severely stenosed, but not incompetent nor calcified. The left auricle was free of mural thrombi. The most striking finding was massive bilateral intrapulmonary hemorrhage, both lungs being entirely filled with blood. There was also a small retroperitoneal hemorrhage in the left renal and lumbar areas. There were no other significant findings apart from congestion of the liver, spleen and adrenal glands. Death was thought to have been due to oligaemic shock, as a consequence of severe intrapulmonary bleeding.

Discussion

This woman died a haemorrhagic death while under treatment with an anticoagulant drug, despite the fact that throughout her stay in hospital, and even on the day of her death, her prothrombin time was never higher than 17 seconds (control 13 seconds.). It is, of course, not at all uncommon for patients under treatment with anticoagulant drugs to die from massive bleeding. In such cases however, it is almost invariably found that the prothrombin time has reached a very high level, frequently above 100 seconds, and it is usual for the hemorrhage to have taken place into the gastro-intestinal tract or the genito-urinary tract, pulmonary hemorrhage being rarely seen. The conclusion one is forced to draw in this case is that the occurrence of catastrophic pulmonary bleeding was conditioned by the previously existing pulmonary venous congestion complicating mitral stenosis. It would seem therefore that in cases of this kind, anticoagulant drugs should be used with circumspection.

Summary

A 41 year old woman was placed on anticoagulant therapy on account of recurrent embolism complicating mitral stenosis with auricular fibrillation. She collapsed suddently and died of intrapulmonary hemorrhage although her prothrombin time on the day of death was only 17 seconds. It is concluded that anticoagulant drugs should be used rather cautiously in patients who may be suffering from pulmonary venous congestion.

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President's Page

"If only some means could be devised to divert the money, energy, and brains used for military defense throughout the world into channels for improving human welfare and the solution of population problems, a near utopia might be in the offing. No group of persons is in a better position to overcome international jealousy and intrigue than the medical profession. Schweitzer is fond of stating: 'The fellowship of those who bear the mark of pain knows no boundary. They belong together all over the world.' . . .

"In the area of human understanding and in order that the fraternity of medicine be unhampered, physicians must remain interested in philosophies responsible for the governments under which they live . . . Let us make sure that our medical fraternity fights just as hard to preserve the freedom and dignity of the individual as we do to preserve human life and alleviate human suffering. Everywhere in my travels it was mentioned by many colleagues that, if physicians were charged with the administration of governments, the threat to human survival would no longer exist. Let us try to deserve this pronouncement wherever we may be . . . International and World Congresses and Alumni Associations such as ours are great forces for the furthering of the cause of peace and of friendship between nations." (From remarks of Henry L. Bockus, M. D., in *Medical Affairs*, University of Pennsylvania, Vol. 1, No. 4, 1960).

Dr. Leonard W. Larson, AMA's president-elect, observes cogently: "More good will and benefit to humanity is carried in a doctor's satchel than in a diplomat's portfolio."

It is likely that neither physicians nor their fellow citizens are cognizant of the many-faceted contributions which are being made by medicine in furtherance of the brotherhood of man. Physicians have great awareness of community, state, national, and international trends. Their methods of influencing and participating in our "Zeitgeist" often are not the methods used by others. A close look at the total activities of many physicians, their conversation with patients, their travels, their hobbies, their hospital and civic work, their talks and writings reveal solid efforts in behalf of human welfare but which lack general visibility.

One may hope that these efforts will grow, that every physician will find outlets for his talents in supporting the freedom and dignity of man.

Lemuel C. McGee

Obituaries

JOSEPH BENJAMIN WAPLES, M.D.
1884 - 1960

Dr. Joseph Waples was born in Georgetown and died in Rehoboth on September 22nd. Son of a former President of the Medical Society of Delaware, he served in the same office in 1936.

Dr. Waples was educated in the Georgetown Public Schools, Episcopal High School in Alexandria, and received his medical degree from the University of Virginia in 1910. Loved by his patients, fellow townsmen, and colleagues, Doctor Joe was honored in 1958 by the Academy of General Practice for having practiced fifty years. Less than a fortnight before his death he was given the Distinguished Service Award of the Medical Society of Delaware. Upon this occasion he received the following telegram from Dr. F. J. L. Blasingame, Executive Vice President of the American Medical Association: *American Medical Association's Board of Trustees, presently meeting in Chicago, extends handclasp of good neighbor and shares your happiness in receiving Delaware Society's Award of Merit. Congratulations! Fifty years of service to your patients represents enviable record few men can boast. Yours is a well-earned honor and we pray for your speedy recovery so you can enjoy it for years to come.*

Editorials

NEW FACILITIES FOR HANDICAPPED CITIZENS

Congratulations are due the State Board of Trustees, the Delaware Association for Retarded Children, the Delaware State Office of Vocational Rehabilitation, the State Board of Health, and a number of interested individuals for the success of their efforts to provide a Rehabilitation Center at Stockley. Under the Hill-Burton Act the sum of $100,000. of federal funds has been obtained as matching money acquired locally to be used for a modernly equipped center not only for mentally retarded but for mentally and physically handicapped persons from the Delmarva Peninsula. This building should be ready for occupancy in one year. Its construction will begin a new building program for the Hospital For The Mentally Retarded.

A bill is now before the House of Representatives to appropriate $520,000. for the first group of two new cottages for residential care of mentally retarded patients. The interest and concern shown by the Delaware citizens in providing more adequate services and accommodations for the physically and mentally handicapped and retarded have earned for the State a position of leadership in the nation in programs for the handicapped. Through the continued support of the physicians in Delaware and other citizens, the welfare of the mentally and physically handicapped can be constantly improved.

MEDICAL WRITING

The Philadelphia County Medical Society has joined with the Delaware Valley Chapter of the American Medical Writers Association in sponsoring a lectureship honoring the late editor of Philadelphia Medicine, Miss Dorothy Harrison. The first lecture of this series will be given on Monday, December 19th at the College of Physicians of Phiadelphia. The lecturer will be Dr. Oscar Batson of the University of Pennylvania, an experienced medical writer, whose message will be of value to medical writers of all walks, degrees and stages. Of course there will be no admission fee for the lecture.

Anyone interested in meeting Dr. Batson at cocktails and dinner prior to the lecture is welcome. There is a small fee for dinner.

If there is sufficient interest, the society (DVC-AMWA) is planning to present a seminar or workshop on medical writing that same afternoon. Dr. Walter Kahoe, Medical Editor for the Lippincott Company will be available to discuss topics of interest and to present a formal critique of any manuscripts submitted in advance. Any persons interested in such a program should contact the Journal office on or before December 1st.

MERITORIOUS SERVICE

In any organization such as your medical society, teamwork is important. Any successful team is composed of many hard working and dedicated individuals. Your editor, as a member of this team, is in a position to see and appreciate the great amount of work that goes into your society.

While there are a number of hard working members, two seem to stand out in the present year.

For the past seven years, our secretary, Dr. Norman Cannon, has devoted his time and energy to the task far and above the call of duty. Words can not express our appreciation to him for dedicating himself without reservation to the betterment of our society.

In his position as Chairman of the Committee on Public Laws, Dr. William LaMotte, Jr., is following in the footsteps of his father. Using not only his personal time that should be given to recreation and his family, he has actually spent time that could have been used in the practice of medicine doing chores for the entire membership of our society.

Our hats are off to these two members whose unselfish actions have so benefited our society.

In Brief

Snake Bite Serum

In answer to a venomous attack on 'American Medicine' and medical societies in general, (including county, state and the AMA) appearing in a special supplement of Harper's Magazine, Lemuel C. McGee, M.D., defended each charge down the line in a statement to the Wilmington Morning News. An advance copy of Harper's "The Politics of Medicine" made it possible for Dr. McGee's answer to appear simultaneously with the newstand debut of their October issue.

Heart Stimulant For Severe Burns

Death due to shock from severe burns can be caused by injury to heart muscle. The use of strong drugs—such as digitalis— to stimulate the pumping action of the heart was recommended to counteract burn shock, at the International Conference on Research, sponsored by the Armed Services and the U.S. Public Health Service.

A Knockout For Allergy

Boxing gloves are prescribed for allergy patients to prevent them from scratching themselves in their sleep. Elmer R. Gross, M.D., Wilmington, in *Archives of Dermatology*, says he keeps boxing gloves in his office to lend patients. The gloves are easily kept clean and if found successful will encourage the patient to buy his own.

NIH Grant

A grant of over $17,000 was made to the University of Delaware by the National Institutes of Health for research in *Genetic Aspects of Radiation Induced Aging.* Arnold M. Clark, Ph.D., is the investigator. Delaware was one of the 29 states in which awards were made as a part of the NIH program of inquiry into health-related characteristics of the aging process.

Selection

The Delaware State Hospital was one of the three psychiatric hospitals selected for a preliminary research project by the World Federation for Mental Health, concerning employee attitudes toward mental illness. The other two were in England and Hawaii.

Memorial Hospital, Wilmington, was one of the five in the country selected by the U.S. Public Health Service for a survey of patients' reactions to "Progressive Patient Care." Memorial was one of two in the group selected which have not as yet instituted the progressive care system.

Music Appreciation

Auditory analgesia—the use of music or overwhelming sound to deaden pain—is under consideration by the American Dental Association. In a study of this method of analgesia conducted at Ohio State, it was found completely effective in 67% of the patients; varying degrees of discomfort was experienced by 22%. Under the technique, both patient and dentist hear sounds through earphones with the volume controlled by the patient who may listen to the music of his choice or select the roaring sound of Niagara Falls.

Personal Glimpses

Leslie W. Whitney, M.D., was elected president of the Delaware Division, American Cancer Society; Joseph Arminio, M.D., vice-president; Thomas Miller, M.D., re-elected director of the American Cancer Society; brief talks were given by Robert W. Frelick, M.D., chairman of Patient Service, and Dr. Arminio, chairman of Professional Service . . . G. W. H. Schepers, M.D., addressed the Northeastern Tuberculosis Conference on *Occupational Aspects of Respiratory Diseases* . . . Lawrence M. Baker, M.D., Dover, and Drs. Walter L. Bailey, Conley L. Edwards, Jr., Carl I. Glassman, Jr., Wilmington, were inducted as Fellows of the American College of Surgeons at the Annual Congress held in October . . . James A. Flaherty, M.D., continues as consulting psychiatrist to the Catholic Welfare Guild . . . Marjorie E. Conrad, M.D., was guest speaker at the fall luncheon of the Ki-Wives, on hypnosis and its use in medicine . . . S. M. D. Marshall ,M.D., retired as chief of the EENT Service at the Milford Memorial Hospital . . . H. Thomas McGuire, M.D., addressed the Lancaster County (Pa.) Medical Society on alcoholism . . . William J. Vandervort, M.D., was named to the Elsmere Health Board in an advisory capacity by Elsmere Council . . . M. A. Tarumianz, M.D., addressed the National Association of State Mental Health Program Directors in Salt Lake City on a "*Blueprint for Mental Hospitals in the Next Decade*" . . . Lemuel C. McGee, M.D., appointed to a new 11-man Medical Advisory Council by the Federal Aviation Agency . . .

Disability Evaluation

A well-prepared medical report can speed the payment of disability benefits to a disabled patient and save the physician time on re-exams and recriminations from unhappy applicants. Program chairmen may be interested to know that a movie, *The Disability Decision,* is available by telephoning Mr. Myron Milbouer, District Manager, Social Security Administration, OL 4-7776, Wilmington.

Waterloo For Cancer Cells

There is hope for cure of the cell that has become cancerous. Plant cancers grafted on healthy plants reverted to normal when artificial acceleration of the growth of healthy cells made them predominate. These successful experiments were made by Dr. Armin C. Braun of the Rockefeller Institute for Medical Research. Dr. Braun believes that a predominance of healthy cell material will stop the riotous growth of cancer cells. Similar experiments are now underway on mouse tumors. The same process may be achievable in human cancers, he said.

Drug Industry Research

PMA *News Release* disclosed that the prescription drug industry spent $197 million dollars on research and development during 1959 in the biggest privately financed assault on ill health in history. It has budgeted an estimated $214 million dollars for 1960. Dr. Austin Smith, president of the PMA, said that the third annual survey of the industry's research activities, in cooperation with the National Institutes of Health, shows that over $18 million of the total was spent outside of the companies' laboratories in the form of grants and contracts to medical schools, hospitals and research institutions.

The Occupational Heart

C. A. D'Alonzo, M.D., is the author of *Heart Disease, Blood Pressure and Strokes* which, with a light touch, removes many fantasies about the subject for the lay person and points up the reasons for seeing a doctor. Dr. D'Alonzo, assistant medical director of the Du Pont Company, is also co-editor with Allen J. Fleming, M.D., medical director, of *Modern Occupational Therapy*, based on 40 years of the Company's experience with its employee medical program.

Anticipated Hospital Expansions

A proposed addition to the Kent General Hospital is under way. It will provide 42 more beds, increasing the number to 135. Also planned are a modern kitchen, a dining room for employes, administration quarters, and a completely equipped recovery room.

A $2,370,000 wing is being added to St. Francis Hospital, to be completed by October, 1961. This will add 150 beds and a two-story laundry unit to the hospital facilities.

Antiseptic Balloons

A new kind of operating room produced at Walter Reed Hospital, in the form of a plastic balloon, has indentations which permit the surgeon and his assistants to be close to the patient, handle the necessary instruments and remain isolated from the incision. The surgeon cuts through the wall where it is glued to the patient; the balloon discarded after the operation. The new set-up, ready to try on patients, is to keep operative wounds free of infection.

Available Service

A union list of current serial holdings in medicine and allied sciences by special libraries in the Wilmington area has been compiled by the Delaware Academy of Medicine and is available upon request, free of charge.

Calesthenics Come-Back

Competitive sports do not replace traditional calesthenics, according to Dr. Robert Bennett, director of physical medicine at the Warm Springs (Ga.) Foundation. He warned that sports, valuable in themselves, tend to over-strengthen the abdominal muscles at the expense of low-back and other muscles. Dr. Bennett urged a return to old-style calesthenics in school, lest students become sway-backed.

Bottom Quarter

Wilmington ranks 60th with a rate of 590.1 per 100,000 population in a U.S. Public Health survey of coronary death rates in 80 leading metropolitan areas. The highest ranking areas are in East and West Coast states and in the Mississippi Delta. The study also casts doubts that coronary disease is closely linked to tensions of city life. *Medical World News.*

DNA New Officers

Elected at the Annual Convention of the Delaware Nurses' Association were: Dorothy Hufcut, chief nurse, Veteran's Administration Hospital, Elsmere, re-elected president; Frieda McMullan, assistant director of nurses, Delaware Hospital, first vice-president; Ruth Curry, director of nurses, Wilmington General Hospital, second vice-president; Mary Ann Early, director of nurses, Memorial Hospital, secretary; Catherine D. Rush, head nurse, Delaware Hospital, treasurer.

Auxiliary Affairs

Profile of Our President

Mrs. J. Leland Fox

Our president, Mrs. J. Leland Fox, is an old hand at Auxiliary affairs. She helped organize the Sussex County Auxiliary, serving as secretary, later as president, and was instrumental in establishing the popular social hour following meetings of the Sussex County Medical Society. In 1950, she served as president of the State Auxiliary.

Mrs. Fox, who was born Marie Steinbach in Norristown, Pennsylvania, chose teaching as a profession. She was graduated from Bucknell University, and did graduate work at the University of Pennsylvania. During her college years, Marie was an active leader, serving as secretary of her class and as president of her sorority and of her dormitory.

Shortly after graduation she married a student at Jefferson Medical College in Philadelphia. As a wife she participated in the social affairs of the students and, later, in those of the interne staff of Jefferson Hospital. During these years she acquired valuable training by employment in Philadelphia department stores. Her duties consisted of comparison shopping, teaching salesmanship and presenting fashion shows.

The Foxes have two children. Jackson L., Jr. (Jack) is a senior at Bucknell, and Frederica (Ricky) is a freshman at the same university. Dr. and Mrs. Fox also have a Norwegian son who came to them under the auspices of the American Field Service. They were the first "host family" in Sussex County, and still keep closely in touch with their boy.

Our president's teacher-training has given her an intensive interest in education. She has served on the Seaford School Board, and in the position of State Chairman of Education for A. A. U. W. Her name is listed as a charter member of Seaford Branch, A. A. U. W., and she has served as president of this group as well as State Arts Chairman. In 1948 she was instrumental in forming an arts study group and convinced Howard Schroeder, well known Lewes artist, to teach a class in oil painting. Mr. Schroeder is still conducting a weekly class in Seaford.

Mrs. Fox enjoys a variety of activities. She has presented fashion shows for churches and civic groups, headed Red Cross and Cancer drives, judged sewing and beauty contests. She is a particularly active member of the Auxiliary to the Nanticoke Memorial Hospital

Sewing is her main hobby, and she has become quite expert. She makes clothes, slipcovers and draperies. With her creative talent she also turns out jewelry, hats, leather gloves, hooked rugs and painted tin ware. She is a good "shot", an excellent swimmer, and recently has taken up skin diving in order to participate in one of the favorite sports of other members of her family.

Contributors Column

Mesrop A. Tarumianz, M.D., associated with Delaware State Hospital in continuous service since 1918, has been superintendent of the Delaware State Hospital since 1926. He is also State Psychiatrist, superintendent of the Governor Bacon Health Center and of The Hospital For The Mentally Retarded, and director of the Mental Hygiene Clinics and the Day Care Centers For Severely Retarded Children. Dr. Tarumianz, chairman of the Central Inspection Board of the American Psychiatric Association as well as chairman of the Committee on Ethics of the A. P. A., is also president of the National Association of State Mental Health Program Directors.

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Kurt Anstreicher, M.D., received the degree of Doctor of Medicine from the University of Vienna, and completed further training at the Graduate School of the University of Pennsylvania and at the Pennsylvania Hospital and Institute. His experience includes service at the School for the Mentally Defective at Portage La Preivie, Manitoba, Canada; Hospital for Mental Diseases at Branslon, Manitoba; Child Guidance Clinics of Western Manitoba. Dr. Anstreicher who joined the Staff of the Delaware State Hospital in 1954, is instructor in psychiatry at the University of Pennsylvania Medical School. He is a Fellow of the American Psychiatric Association and is president of the Delaware Psychiatric Society.

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Mary Nanigian, M.D., associated with the Governor Bacon Health Center since 1956, has worked closely with the maladjusted presychotic and psychotic children. After completing approved training in psychiatry, she has been Acting Clinical Director since 1957. Dr. Nanigian was formerly with the Weston State Hospital, West Virginia, where she was in charge of the women's service, and for two and a half years she was at the Eastern State Hospital, Williamsburg, Virginia, where she completed two years of approved training in psychiatry and, for approximately one year, was Acting Chief of the Women's Service.

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Leon E. Petty is a graduate of Howard University; B.S. and University of Delaware; M.S. Dr. Petty, on the psychological staff of the Delaware State Mental Hygiene Clinics for the past four years, is a member of the Delaware Psychological Association; associate member of the American Psychological Association; American Group Psychotherapy Association, and a member of the Council for Exceptional Children.

Louis J. Kowalski, M.D., formerly Assistant Director of the Bureau of Mental Health for the State of Pennsylvania, and Clinical Director of the Austin State Hospital, Texas, was at one time associated with the Pediatric Psychiatric Clinic of Temple University, School of Medicine. He also was on the teaching staff of the University of Pittsburgh Medical School in association with his services in the Western State Psychiatric Institute and Clinic at Pittsburgh. Dr. Kowalski was psychiatric consultant for the Arizona State Hospital in Phoenix, and is certified by the Board of Neurology and Psychiatry. He has been living at the Governor Bacon Health Center, Delaware City, Delaware, for the past two years.

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Charles William Dunn, M.D., New York University Medical College, '15, has conducted original clinical research in endocrinology for the past 30 years and was instrumental in establishing the basis of the use of stilbestrol in carcinoma of the prostate. Dr. Dunn, a retired Associate Professor of Medicine at the Graduate School of Medicine, University of Pennsylvaia, has been associated with the Delaware State Hospital for the past 20 years and is a member of the Endocrine Society.

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Roger H. Culpan, M.D., a New Zealander who obtained his medical qualifications from the University of New Zealand in 1951, moved to England to take his specialist qualifications in internal medicine with the Royal College of Physicians of London and then received his diploma in Psychological Medicine at the University of London. He is at present visiting the United States in order to further his experience, before entering private psychiatric practice in his own country.

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Harry S. Howard, M.D., University of Buffalo, '34, practiced general medicine in Buffalo until he entered psychiatric training in 1942 at Kalamazoo State Hospital, and was affiliated with Kalamazoo Child Guidance. In 1949 he became Clinical Director of the Delaware State Mental Hygiene Clinics. In this capacity he has served as psychiatric consultant to the Wilmington Child Development and the Delaware (State) Child Development and Guidance, for the three schools for delinquent children, and for a period of time, for the New Castle Correctional Institution. Dr. Howard has published a number of papers on the subject of delinquency in children and adults.

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Address*

TO THE MEDICAL SOCIETY OF DELAWARE

JAMES E. MARVIL, M.D., PRESIDENT

1960 may be called a year of decision in regard to American medicine. Never before have so many worked so hard to force upon the American public the first step toward the socialization of medicine.

The United States is almost alone in retaining the system of private enterprise where each community takes care of its own medical problems. Now that it is too late, in England, Austria, certain Canadian provinces and in many other places, we hear of great dissatisfaction with socialized medicine. I personally have observed socialized medicine in England where really ill patients are neglected because so much time is taken up with patients who are not ill but take advantage of medical services because they are free.

We still have time and should take every opportunity to present facts as we know them. We are opposed to political medicine and we can see only harm from it. Our elected representatives want to know our opinion and are influenced greatly by our presenting material to help them vote properly.

Your President, your Executive Secretary and your Chairman of our Legislative Committee, have attended a national conference sponsored by the A.M.A. on legislative matters in St. Louis, Missouri in October, 1959. We have, during the past year, also visited our legislature in Dover and our Senators in Washington relative to legislation regarding health matters. We found them willing to listen and anxious for our views regarding health legislation. So far they have voted in the best interests of proper medical care. We have found that our elected representatives look to us for guidance in these matters.

We should also explain to our patients in the same way, what will be lost for them as far as proper medical care is concerned. They should be told that what may appear to be a free handout may actually cost them dearly in the end by substituting political medicine for what is the best medical service in the world.

It has been demonstrated clearly that if we fail to furnish the best medical care, then legislation will be passed to attempt to force the situation.

What can we do?

1. We should get our own house in order.
2. We should provide medical care of such quality that there will be no demand for socialized medicine.
3. We should provide care at fees the indigent, the low income group and the restricted income group, such as the aged, can afford.

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*Presented at the Annual Meeting, September 9, 1960, Lewes, Delaware.

Delaware is 15% below the United States average in physicians, which causes certain dissatisfaction when patients are not able to reach physicians who are already overworked.

In December, 1959, the Council of our society authorized the investigation of the need for and the feasibility of a medical school for Delaware. Following a suggestion from Governor Boggs that our society should confer with the University of Delaware regarding the matter, the President, Vice President and two others met in April with Dr. Perkins and several of his board of trustees.

Our Committee and Dr. Perkins' Committee had arrived at the same conclusion by previous independent studies. Briefly the findings were:

1. Present medical graduates (6860 annually) are too few for present needs and in ten years will be 30% below present physician-population ratio.

2. Foreign graduates who have been filling deficits will be sharply curtailed due to the Educational Council for Foreign Graduates restrictions.

3. There are 700-800 vacancies in third and fourth year United States medical school classes at present.

4. That a two-year medical school in Delaware would be desirable, especially since our state's populations growth is so rapid and since Delaware is presently 15% below the United States national average in physicians.

5. Dr. Perkins' estimate for cost is two million dollars for buildings and 14 million dollars for annuities. He stated that a medical school would fit in well with the present university graduate program.

Formerly many of us felt that a medical school would be too expensive and would be impossible for Delaware to build and maintain.

The cost of building a two-year school would not be more than construction of two or three miles of super highways. Which is most important to us? American medicine is facing a desperate crisis and one of our greatest needs is more physicians so that we can continue giving the best medical care.

Our society could help provide:

1. Teaching staff
2. Help in fund raising.

There is considerable lay interest in such a project, especially if research is connected with the medical school. Many of us believe that funds could be raised for such a project without great difficulty, with the help of some federal aid.

It has been pointed out that Delaware students should have equal opportunities to study medicine. Due to so many applicants, schools are inclined to take their own residents first.

So far we have been fortunate in having many foreign trained physicians come to us. With the new Educational Council for Foreign Medical Graduates restrictions, the number will be sharply curtailed.

It has not been necessary to import foreign lawyers, dentists, clergy, et cetera and we should be able to train our own physicians.

E. Vincent Askey, M.D., president of the A.M.A., in his address to the House of Delegates at Miami emphasized the need for training more physicians. He especially emphasized the importance of expanding present medical schools and building new ones. Dr. Arthur Fleming of H. E. W. has introduced a bill in congress to aid present and new medical schools.

As physicians we have a duty—to take the lead in pointing out the need for better medical care. Many lay persons are interested in a Delaware Medical School and are waiting for the physicians to demonstrate our interest.

PROCEEDINGS OF THE HOUSE OF DELEGATES*

MEDICAL SOCIETY OF DELAWARE

The Meeting of the House of Delegates of the Medical Society of Delaware was called to order at the Henlopen Hotel, Rehoboth, Delaware, at 7:15 o'clock p.m., Thursday, September 8, 1960, President James E. Marvil, M.D., presiding.

A roll call was taken by Secretary Cannon and a quorum declared.

The minutes of the last session were accepted as printed in the Journal.

President Marvil: We will now hear the report of the officers. The President's Report will be given in greater detail tomorrow during the Presidential address. I would like to say that 1960 has been very active because of the legislation concerning the Forand bill. The officers, the President, the Executive Secretary, the Chairman of the Legislative Committee and several others have been very busy working on that. The President, the Executive Secretary and the Chairman of the Legislative Committee visited St. Louis last October to attend an A.M.A.-sponsored Legislative Conference. You will hear more about that later. That was a three-day conference and it was very effective. We found out a great deal about the Forand Bill.

We have also during the year visited Washington. We were very cordially received by our Senators Frear and Williams, who listened very attentively to our views and voted on health matters the way we thought they should.

Another item which happened this year is that all delegates have received a mimeographed paper in regard to a two-year Medical School which has been proposed for Delaware.

Council authorized the collection of statistics and material about that last year, and during the year we have collected a great deal of material. You will hear a little more about that later. The Council today authorized the continuation of that committee and advised that we make efforts to finance the project without going to the State for help.

President Marvil: We will now hear the Secretary's report.

Report of the Secretary

The office of the Secretary has been conducted on a current basis during the past year. Minutes of the Committee meetings have been kept. The Secretary has also functioned as Chairman of the Commission on Public Affairs and has held two meetings of the Commission during the year. A third meeting, if necessary, is planned for just prior to the House of Delegates meeting where the Commission will act as a reference committee.

Respectfully submitted,
Norman L. Cannon, M.D., Secretary

The report was accepted.

President Marvil: I think we all realize how much Norman Cannon has done for this Society, how hard he has worked, and I think a lot of appreciation would certainly be in order.

A motion was passed with a round of applause extending a vote of appreciation to Secretary Cannon.

President Marvil: The Treasurer's report will now be given.

Dr. Levy: Mr. Chairman, I have here the audit as prepared by Haggerty and Haggerty which is for the year July 31, 1959 to July 31, 1960. They will prepare an audit for an additional five months, from the first of August until the end of December and then furnish us with an additional audit from January 1, 1960 until January 1, 1961 or December 31, 1960, which is a return to our original fiscal year—the calendar year.

According to their report regarding the scope of the examination, they state:

We have made tests of the income and expense factors in the Treasurer's records and those of the Delaware Medical Journal, which we consider necessary in the circumstances.

Report of the Treasurer

MEDICAL SOCIETY OF DELAWARE

GENERAL FUND

Balance Sheet at July 31, 1960

Balance, Beginning of Year	$10,249.55
Receipts:	
Dues:	
State Society	17,437.00
AMA	9,175.00
Subscriptions— Medical Journal	1,113.00
	27,725.00
Annual session— proceeds of ticket sales	1,132.50
Delaware Academy of General Practice	7.76
Annual session— rent, exhibit space (partial)	400.00
Income from investments —schedule A-1	1,165.05
Medical Journal— rent and stenographer	480.00

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*The complete report of the Proceedings of the House of Delegates is on file in the Medical Society office and is available to members for reference.

Reimbursement— annual meeting expense		44.00
Reimbursements— committee expenses		474.19
AMA—1% reimbursement collection of dues		41.50
Employees' withholdings		2,138.82
Medical Journal— payroll taxes and witholdings, etc.		1,132.57
Proceeds—sale of desk and chair		200.00
Rent contribution from Journal		1,250.00
		36,191.39
		$46,440.94
Beginning Balance and Total Receipts		
Disbursements:		
Salaries and Payroll Taxes		$11,644.37
Operations		3,578.20
Office		2,397.98
Travel		2,709.19
Annual Session		1,859.30
Memberships and Contributions		195.00
Other:		
AMA dues	$ 9,175.00	
Withholdings, etc.— due from Journal	1,003.22	
Employees' withholdings	2,294.41	
Accounting	275.00	
Travel advance— New Castle County Medical Society	90.12	
		$12,837.75
Total Disbursements		$35,221.79
Balance, End of Year		$11,219.15

MEDICAL SOCIETY OF DELAWARE

Balance Sheet at July 31, 1960

Assets

General Fund:		
Cash in bank:		
Regular account	$11,219.15	
Savings account	5,314.57	
		$16,533.72
Investment—		
Stocks	12,949.08	
Government bonds	11,073.76	
		24,022.84
Due from State Medical Journal	171.11	
Due from New Castle County Medical Society	90.12	
		261.23
		$40,817.79

Liabilities and Fund Balances

General Fund:		
Liabilities:		
Employees' withholdings and accrued payroll taxes	$ 217.07	
Reserve:		
Defense fund	1,000.00	
Fund balance	39,600.72	
		$40,817.79

Assets of the Delaware Medical Journal (see report of the Publications Committee) are also assets of the Society, as sole owner of the Journal.

The report was accepted.

President Marvil: The report of the Executive Secretary will be heard next.

Report of the Executive Secretary

A report of the staff to the membership of the Society is at best a highly abbreviated thing. There is no pracical way for me to present to you in concise form the things that have occupied our time for 11 busy months. The months have been busy; more so than in any previous year, as the Society reaches out for new programs, new alliances, and new manifestations of its fundamental principals. Most of these appear in one form or another as part of the committee reports. Staff work played a part in most of the committee's work, and I do not propose to launch into a pointless cataloging of meetings, special problems and details. What I propose to offer you is a birdseye view of the range of the Society's activities, with few details and many omissions. I hope that you will ask any questions that occur to you.

Electronics Education Programs

Perhaps the most rewarding step taken by the Society this year has been its venture into electronics for postgraduate medical education. The thirty-week series of two-way radio programs provided several thousand physician-hours of education, and was very well received. It will be continued this coming year. Dr. Richardson's report on the measurable value of these programs will be read at tomorrow's general session and should be of interest to you. A supplementary program was the trans-atlantic CPC between the Medical Society of Delaware and Britain's Royal Society of Medicine. This, too, was enjoyed by those who attended, and is now available as a tape-recording. We will be alert for ways to expand our use of electronics to bring postgraduate education to the physician.

Activities in the Field of Aging

It is gratifying to be able to report the evolution of a wide range of activity on the part of the Society in the field of aging. An important educational program was co-sponsored in Baltimore by this and several other state medical societies, with the active participation of the AMA. Press and public representatives were invited from the middle-Atlantic region. Four Delawareans spoke on the aspects of the aging problem, and were joined by similar representatives from other states.

The formation of a local Delaware Joint Council to Improve the Health Care of the Aged, at medical society initiative and leadership, points the way to a broad interprofessional program to improve the lot of the elderly. Dr. Washburn's report on the early activity of this Joint Council will be read shortly, and will show explicitly the directions the group is taking. Close rapport has been maintained between the Governor's Conference and the White House Conference on Aging. The number of physicians participating in the local conference in official capacities and as representatives of organized medicine was most encouraging. The influence of doctors is also being felt in the community councils on aging, as illustrated, for example by Wilmington's, which includes the secretary of the state society, the chairman of the Society's Committees on Medical Service and on Public Laws, other physicians, and the executive secretary of the State Medical Society.

A society staff survey of the welfare patients in the Delaware Hospital has developed information of value in our consideration of these problems. A special aging issue of the Delaware Medical Journal was published, and given wide distribution within and without the profession, in an effort to disseminate useful information. Legislative support has been offered constructive bills for the aged in both the state and national legislatures.

The question of how best to provide for the place of the elderly in our changing society is far from solved. It extends beyond health care, to all facets of human need. Medicine, however, is working actively toward a proper solution, and allegations to the contrary are false and misinformed.

Forand Campaign

It is difficult to evaluate exactly the meaning of this year's victory over Forand-type legislation. There is a strong temptation to call it a decisive victory, which it was not, or to say that it gained nothing but time, which understates the case. Proponents of state medicine timed a strong, well-planned legislative drive to culminate just before the 1960 election campaigns. The stopping of this drive by organized medicine and allied groups demonstrates the effectiveness of physicians when well-organized behind a proper cause. It does not mean that the victory is final, because it is not. For more detailed analysis, I refer you to the Committee on Public Laws, but I want to insert a note concerning the special debt owed by the Society to those physicians who worked actively to preserve the independence of medicine from government regulation, and in particular to Drs. Marvil, LaMotte, Pollak, and Eugene McNinch, who served as key men for this campaign in their respective counties. I should also remind you that when the chips were down in the post-convention session of Congress, both Senator Frear and Senator Williams, Democrat and Republican, stood with medicine's point of view.

Journal

The Executive Secretary continues to manage the business of the Delaware Medical Journal. Two years ago we were able to report the recouping of previous losses, and plans by the Publications Committee to expand and improve the Journal. At the same time, plans were announced to increase the contribution made by the Journal to the financing of the Society, and to balance the finances of the book by increasing funds spent on its production.

All of these plans have been carried out. $2000 a year is now transferred from the Journal directly to the Society's budget, while total production costs have been increased by $10,000 to make the Journal of more value to the membership. Income has also been increased, so that for this year the Journal shows a net gain of somewhat under $100. The book is, I believe, more interesting and more attractive than it has been in the past, due to the efforts of the Committee, the Editor and the Assistant Editor. It is also in sound financial condition.

Revised Medical Practice Act

The revision of Delaware's Medical Practice Act passed this year by the Legislature is a significant step forward in the delegation to medicine of the right and duty to police itself. It should be considered a part of a national movement toward greater attention by medicine to this phase of its activity. The newly created Committee on Medical Discipline of the AMA, of which Delaware's H. T. McGuire is a member, is evidence of this. A hearing by this Committee in New York on state disciplinary problems on procedures, before which Dr. Gehret of the Board of Medical Examiners and the Executive Secretary testified, gives me the impression that the new code puts Delaware among the best-equipped states in the nation to handle problems of this kind.

Medical Economics

Two items of medical economics deserve the attention of the House of Delegates. First of these is a proposed group contract for members of the Society with Blue Cross-Blue Shield, which can result in a considerable cash savings to those members who elect to participate. A council resolution concerning participation in this plan will be presented to you at this meeting for your consideration and possible endorsement. If you direct that such a plan should be instituted, we shall hope to have it in affect by the end of the year.

Secondly, you will note that the Committee on Medical Economics is recommending the preparation and adoption in Delaware of a Relative Value Fee Schedule. This schedule can best be described as a medicare schedule without fees, but with units which may be converted to dollars by the application of a dollar multiple to the units allocated to a given procedure. The Relative Value Schedule is a valuable tool in negotiation of contracts, since it establishes the value of one procedure to another in terms easily transposable for different applications. Your acceptance of the recommendation of the Committee for adoption of such a schedule would be of potentially great value to the Society, but also carries certain dangers. I call this to your attention for possible discussion at the time the report of the Committee is presented.

Polio Vaccination Campaign

In 1957, the Society began its program of Salk vaccination clinics with the Board of Health and the Delaware Chapters of the National Foundation. It has proved highly successful in terms of both concrete benefit to the public and public relations values realized by the Society. This four-year program concluded in 1960, with about 400,000 Salk shots having been administered to the public in the special clinics alone. This project has resulted in nearly 100% polio vaccination among the 7-19 age group in the state, and in relatively high coverage of other groups of all ages. It is perhaps significant that as the national rate of polio incidence rose this year, Delaware's fell.

Annual Meeting

Technical exhibits have been restored to this year's annual meeting at the direction of the Council. We have split the meeting site between Lewes and Rehoboth in order to accommodate them. This move is less radical than it sounds, since all of the events connected with the scientific session take place in the same building, while the meeting of the House of Delegates and the cocktail party and banquet have been held in different sites and indeed in different cities in the past.

Revenue from exhibits will be $885 this year, a considerable decrease from the figure usually obtained in Wilmington, but up 62% from the last Rehoboth meeting, and offset somewhat by the decreased cost of labor and services. The people of Lewes and Rehoboth have been exceptionally helpful in their various functions, for which I am grateful.

Unfortunately, exhibit revenue still fails to provide the 50% of the cost of the meeting that would be a desirable minimum, and will probably continue to do so until really good convention facilities are made available at reasonable cost somewhere in the state.

The break in the continuity of our exhibit schedule has resulted in a rather high rate of drop-out among our exhibitors this year. It has been necessary to use some promotion in obtaining new exhibitors. If the technical exhibit is to be continued in the future, as many as possible of these new exhibitors should be converted to long-term attenders. I should like to remind the Society in this connection that the attendance of the exhibitors and the help that they provide in financing the meeting and in offering educational material for physicians who attend is dependent upon each member's accepting the responsibility of visiting the exhibits and providing the contact with physicians for which these firms are paying.

Acknowledgement and appreciation is due Mrs. Winifred S. Donnelly, staff secretary, and Mrs. Melita A. Phillips, assistant editor, for their hard work on behalf of the Society. Each has made a definite contribution, and each has gone beyond the confines of the job to provide the flexibility necessary in this small organization.

In conclusion, I want to express my personal appreciation to the officers and members of each of the county medical societies for their courtesy and hospitality when I have visited them, and to the officers and members of the Medical Society of Delaware for their consideration and support throughout the year.

Respectfully submitted,
Lawrence C. Morris, Jr.
Executive Secretary

The report was accepted.

President Marvil: I would like to add my personal comment to this report. I think Larry has done a wonderful job and I know that he has worked very hard, I know that his office staff worked very hard, that they couldn't possibly turn out the terrific amount of work they do turn out without a lot of hard work, and I know that all of us appreciate having such competent help to take care of our affairs for us.

I would like to read two telegrams which arrived a little while ago:

The first one is dated New York today, addressed to me:

"Best wishes for a successful meeting. Deep regrets that circumstances make it impossible to be with you. Al Shands."

We are very sorry that he is not able to be here. He is attending a meeting in New York.

The next one is dated today, addressed to me:

"Last minute commitments prevent me from attending your annual meeting. I am indeed sorry since I look forward to being with you. Best wishes for a successful meeting. Allen W. Cowley, President, Pennsylvania Medical Society."

We are very sorry that Dr. Cowley and his wife are not able to attend with us.

The next order of business will be reports of Standing Committees. The first is the Budget Committee, Dr. Levy.

Report of the Committee on the Budget

Dr. Levy: The Budget Committee wishes to report and recommend the adoption of the following budget:

We anticipate again dues, $20,000; that with collection of rentals and the banquet tickets and dividends on our investments would give us total receipts of $34,967.

Our disbursements: Salaries, $12,852. The operation of the Journal, $3,000. The office expenses, $3,300. Travel expenses of $1,465. Our Annual Meeting, printing, the banquet, etcetera, of $2500. Various subscriptions to meetings and conferences, and so on, of $397, giving us what I might call a surplus or an amount unbudgeted for contingencies of $1628.

I would now like to present the budget.

Your Committee on Budget recommends adoption of the following budget for the year 1961:

RECEIPTS			
Dues—State Society		$20,000.00	
Dues—AMA		9,750.00	
Collection Commissions—AMA Dues		97.50	
Overhead Contribution from Medical Journal		1,980.00	
Exhibit Rental		1,000.00	
Banquet Tickets		1,400.00	
Dividends		740.00	
Total Receipts			$34,967.50
DISBURSEMENTS			
Salaries			
Salaries	$12,600		
Social Security Taxes	252		
Operations			$12,852.00
Journal Subscriptions		$ 1,300.00	
Audit		275.00	
Committee appropriations			
Medical Service and Public Relations	$ 500		
Public Laws	200		
AMEF	150		
National Defense	100		
Medicare Adjudication	50		
Woman's Auxiliary	100		
Contingency	400		
		$ 1,500.00	
			$ 3,075.00
Dues Forward			
American Medical Association			$ 9,750.00
Office			
Academy contribution	$ 2,100		
Telephone & Telegraph	550		
Stationery & Printing	500		
Miscellaneous	150		
			$ 3,300.00
Travel			
AMA—Delegate	$ 500		

AMA—MSEA Conference	165	
AMA—Public Relations Inst.	150	
Local	300	
Contingency	350	
		$ 1,465.00

Annual Meeting

Stenotyping	$ 300	
Printing	200	
Supper—House of Delegates	200	
Banquet	1,200	
Guest Speakers	300	
Prospectus	50	
Freight Charges	100	
Wiring	50	
Porters	30	
Clerical Help	45	
Janitorial Help	25	
		$ 2,500.00

Subscriptions, Contributions, Dues

AMA—Aces & Deuces Dues	$ 25.00	
Conference of Presidents of State Medical Societies	25.00	
Medical Society Evecutives Association	10.00	
Delaware State Chamber of Commerce	50.00	
Delaware State Science Fair	50.00	
Shearon Legislative Service	12.50	
Joint Council/ Aged	50.00	
Institute for Organization Management	175.00	
		$ 397.50

Unbudgeted for contingency $ 1,628.00

Some comment is in order concerning the 1961 budget. For the first time, we have included American Medical Association dues in our receipts, balancing them with an equivalent entry under disbursements. This has been done simply to bring the budget into closer accord with our books.

The Society has invariably lost money on its annual reception, banquet, and supper for the House of Delegates. Questioning the wisdom of subsidizing these affairs from the general fund, we have recommended pricing banquet tickets at $10 in 1961, in order that the reception and banquet may carry themselves.

Exhibit rental has been restored as an item in our receipts. Noting the return to a technical exhibit at the annual meeting this year, we assume that this will be permanent. The $1000 figure that we have estimated is probably conservative.

We call your attention to the overhead contribution from the Delaware Medical Journal. This represents a $1000 contribution toward the expense of maintaining the headquarters office, $480 toward secretarial service for the Journal, and $500 for the services of the executive secretary as business manager for the Journal. This amount will be passed on to the executive secretary as an increase in salary. The Society is matching the amount.

The contribution to the Delaware Academy of Medicine has been increased by $100, to cover the electricity used by electric office machinery and air-conditioners. This was part of our original occupancy agreement, and the Academy has now had enough experience to allow a building management expert to calculate the additional cost.

The projected cost of the annual meeting has increased considerably over last year. Some of this increase is due to additional expense made necessary by the technical exhibits, but this is expense which will be more than compensated by the revenue from those exhibits. The other portion of the increase has come from a transfer of the allowance for guest speakers from the travel fund to the annual meeting fund, where it properly belongs.

The Committee on Budget calls your attention to three contingency funds within the budget. One is for travel, one is for committee expense, and the other is uncommitted. Since it is impossible for us to anticipate exactly what the Society will be called upon to do in each of its many areas of activities within the next year and a half, we consider the keeping of uncommitted funds in the budget absolutely necessary. This budget, therefor, does not show exactly where all of the Society's funds will be spent during the next year, but instead gives a general idea of the proportions and the problems that we expect to meet. To budget in any other way would impose such rigid restrictions that the flexibility the Society must have, would be lost, and the organization crippled as a result.

Respectfully submitted,
Charles Levy, M.D., Chairman
R.L. Klingel, M.D.
T. H. Pennock, M.D.
W. C. Pritchard, M.D.
M. A. Tarumianz, M.D.

The report was accepted.

PRESIDENT MARVIL: We will now hear the report on Medical Education by Dr. Heckler.

Report of Committee on Medical Education

The Committee on Medical Education has directed its activity to two projects during this past year.

1. *Weekly Radio Seminars*:

In October of 1959, a series of 30 weekly radio programs was begun and carried out through April of 1960. The programs originated from a central Philadelphia FM station and were transmitted to 10 Delaware stations, of which 5 (Delaware Academy of Medicine, Wilmington, Delaware—Lewes, Delaware—Dover, Delaware—Seaford, Delaware and Milford, Delaware) were equipped with transmitter sets permitting return conversation to Philadelphia. Physicians who were unable to attend the meetings at the central locations could also receive through conventional FM radio.

The before and after examination in which 101 Delaware physicians participated gave this project as thorough an evaluation as we have ever known. The results, which will be reported tomorrow by Dr. Richardson, and the attendance records from this past year indicated that this was a fairly successful means of medical education and plans are now being made to resume the programs in October of 1960. The list of weekly subjects to be discussed will be published in the Delaware Medical Journal.

2. *Trans-Atlantic Clinical Pathological Conference*:

On April 20, 1960, the first trans-Atlantic broadcast between the Medical Society of Delaware and the Royal Society of Medicine, London, England, was carried out. This pogram was sponsored by Smith, Kline & French Laboratories, and consisted of a panel of 4 English physicians and 5 Delaware physicians. The two panels exchanged unknown cases for diagnosis and following each panels' discussion of the case, the diagnoses were revealed and discussed. Tape recordings of this program are available.

Respectfully submitted,
G. Barrett Heckler, M.D., Chairman
Albert Gelb, M.D.
Laurence L. Fitchett, M.D.

The report was accepted.

PRESIDENT MARVIL: the next report will be that of the Program Committee, Dr. Metzger.

DR. METZGER: The current program of the Medical Society beginning tonight will serve as our report.

I express my appreciation to you, Mr. President, to Dr. Rollins, Dr. Beebe and to Mr. Morris and to many other people who have helped to get this going this year.

This program was published in the Journal of the Medical Society of Delaware.

PRESIDENT MARVIL: Thank you very much. We will all see how the program ends, but I think it is a very good program—it certainly appears to be so.

The next report is on publications which will be in two parts. The first part is by Dr. Clagett.

DR. CLAGETT: I would like to take this opportunity to again stress with you that this is your Journal. The State Journal, Delaware State Journal, or any State Journal, in 1930 was a publication for the specific purpose of recording the business transactions at such a meeting as we have tonight and publishing the papers presented at the Annual Meeting of the Society. In 1960 a State Journal must be much more than that. We can not get the papers from our speakers because they will not come and speak to us if we demand, as is in our by-laws, that they submit a manuscript. So many times we have to go without those papers.

This is your Journal. It is my conviction that this is a Journal where we as members of the Society should exchange ideas, ideas that are not at all breathtaking. We are not trying to compete with the big medical journals in the country; we are trying to establish a new department of briefcase reports. We have a professional writer in our department, and if you send us the notes that you have taken on a patient, with any appropriate X-rays or other data, we will work it up and get it started in this new department. But this is your Journal, and whether it continues to grow or whether it ceases to survive is up to you.

Report of the Publications Committee

Report of the Editor

The editor is pleased to report an increase in the amount of scientific material submitted for publication as compared with previous years. We plan to go ahead in our campaign to secure a greater volume of material, emphasis being placed upon case reports from members of the Society. We are continuing to solicit this material.

We have received numerous letters and verbal compliments regarding the improved format of the Journal. This obvious improvement is due entirely to the efforts of our Assistant Editor, Mrs. Melita Phillips.

A new schedule changing the assigned months of certain hospitals for their issue of the Journal has been issued. Further changes are expected. This is part of a program to achieve a better balance between the amount of text and advertising in certain months. The proposed changes will be of benefit to our sponsors which in turn will benefit us.

The editor deeply appreciates the constant interest and helpfulness of the members of the Publications Committee and the work done by the Business Manager and the Assistant Editor to whom any credit belongs for the marked improvement in the calibre of our Journal.

Respectfully submitted,
A. Henry Clagett, Jr., M.D., Editor

The report was accepted.

PRESIDENT MARVIL: Thank you very much, Dr. Clagett. I certainly agree with what Dr. Clagett has said. I think the Journal has certainly improved this year—I have heard a great many comments, both as to the appearance of it and the material in the Journal.

DR. MC GEE: Mr. President, I move a vote of appreciation for Dr. Clagett and his staff for what thev have done for the Journal.
The motion was seconded and carried.

PRESIDENT MARVIL: We will now have the Financial Report on publications.

Report of the Managing Editor And Business Manager

Conclusion of operations, July,1959 issue through
Conclusion of operations, July, 1960 issue

Statement A — Operating (checking) Account

	1958-59	1959-60
Balance, beginning of year	$ 9,526.36	$12,802.67
RECEIPTS		
Advertising	27,474.98	29,854.75
Subscriptions	1,332.04	1,321.50
SMJAB — Working Fund Rebate	1,008.65	809.60
SMJAB — Refunded Discounts	23.47	34.42
Reimbursed expense	8.50	445.60
Interest	87.50	87.50
Royalties		1.04
Single Copies	209.50	51.31
Rosters	24.00	20.00
Rebate on mailing permit	10.00	
Operating Total	$30.178.64	$32,625.72
Transfer from Wilmington Trust Co., Savings Account		1,849.17

Total	$30,178.64	$34,474.89
DISBURSEMENTS		
Printing and Mailing of Journal	19,888.74	23,080.40
Salaries	4,290.00	6,380.00
OASDI Taxes	92.40	167.50
Stationary and supplies	538.19	249.97
Copyrights	48.00	48.00
Manuscript Typing		42.50
Addressing of Journal	120.00	120.00
Cover Redesign		154.50
Plates		466.89
Press Clipping Service		200.00
Photography		107.41
Special Printing	175.00	133.75
Reimbursed taxes, MSD		303.95
Furniture		97.99
Travel and expense, including SMJAB reimbursed expense	270.95	332.09
Insurance	92.85	92.85
Recruitment	43.20	
Rights	80.00	
Credit Investigation	3.00	
Mailing Permit Transfer	10.00	
Rent, including prepaid rent	1,250.00	750.00
Operating Total	$26,902.33	$32,727.80
Transfer to Wilmington Savings Fund Society—Savings Account		5,000.00
Total		$37,727.80
Balance, end of year	$12,802.67	$ 9,549.76

Statement B — Savings Account

Wilmington Savings Fund Society		
Balance, beginning of year	$ 3,744.37	$ 3,875.41
Interest	131.04	135.63
Deposited		5,000.00
Balance, end of year	3,875.41	9,011.04
Wilmington Trust Company		
Balance, beginning of year	1,765.54	1,801.20
Interest	35.66	47.97
Transferred to Wilmington Savings Fund Society		1,849.17
Balance (account closed)	1,801.20	
Total in Savings Accounts	$ 5,676.61	$ 9,011.04

Statement C — War Bands

Purchase date — 1942	$ 3,502.38	
Cost		
Current Value		$ 3,502.38
Operating Funds and Reserve, beginning of year	$18,538.65	$21,981.66
Operating Funds and Reserve, end of year	21,981.66	22,063.18
Net Gain for Year	3,824.06	81.52

Respectfully submitted,
M. A. Tarumianz, M.D., Managing Editor
Lawrence C. Morris, Jr., Business Manager

The report was accepted.

President Marvil: The report of Public Laws will be heard next.

Report of the Committee on Public Laws

(1) *Relations between medicine and optometry.*

During the past year, there have been no developments in this category. No legislation has been submitted by optometry in this state affecting the practice of medicine, and no steps have been taken by organized medicine to kindle the fires of controversy which have in the past burned in this area. Thus a relative truce exists and it is hoped that with continued sensible cooperation this situation will prevail. In connection with this, we call your attention to paragraph 6 of this report, which reinforces our hope that organized medicine and organized optometry in Delaware may be reaching a basis for amicable settlement of our differences.

(2) *Revision of the Medical Practice Act.*

The president judge of the Superior Court of Delaware, Charles L. Terry, Jr., appointed a committee to study proposals for revision of the Medical Practice Act. This committee included representatives of the Medical Council itself, the Board of Medical Examiners, and the Medical Society of Delaware. After a number of meetings of this entire committee, together with meetings of subcommittees, an act was prepared to amend chapter 17, title 24, Delaware Code, relating to medicine, surgery, and osteopathy. The amendment as finally created by this committee was passed by the legislature during the past year. The revisions in this amendment were chiefly in two fields: *One,* updating the requirements for licensure particularly in reference to foreign medical graduates in keeping with the recommendations of the Educational Council for Foreign Medical Graduates. *Second,* clarification of revocation or suspension of licensure and indeed creating a new category of suspension not previously in existence. This was supplemented by the creation of medical censor committees in each of the three counties.

(3) *The Medical Examiner system versus the Coroner System.*

Delaware lost its medical examiner by resignation as of December 31, 1959. The problem of obtaining another pathologist to fill the post of medical examiner was complicated by many factors, not the least of which was inadequate appropriations for the proper conduct of the office of the medical examiner. On the other hand, the request for additional appropriations for this purpose was complicated by the unwillingness of the legislature to provide such funds without the existence of a person to fill the post. It was felt by this committee that political realities in this state dictate the necessity of accepting the coroner system as a part of any workable solution to the problem of a medical examiner's existence here. This implies the development of means to improve the existing coroner system by incorporation of the services therein of a forensic pathologist. We have so recommended to the Attorney General. Meanwhile, the committee recommended to the Council of the Medical Society that it sponsor a bill to provide for supplemental appropriations for the medical examiner's office, and another which provided authorization for the state Board of Post-Mortem Examiners to engage a pathologist to do autopsies in the absence of an official state medical examiner. This was done, but it proved impossible to get passage of these bills in the absence of a physician in the medical examiner's office. The problem was ultimately resolved by appropriations from the Levy Courts of the three counties to engage physicians to work with the coroners in specific cases.

Complications have arisen in the handling of criminal cases requiring a decision of the medical examiner and enabling legislation has been secured to permit the office of the attorney general to handle this type of situation until the post of medical examiner is filled again. The situation remains at this point in a state of relative confusion. An effort was made by this committee to interest the Board of Post-Mortem Examiners to influence the platform committee of the state conventions of the two major political parties to include the recommendation for adequate appropriations for the conduct of the medical examiner's office. The impression was gained that the Board of Post-Mortem Examiners felt that nothing could be done until the new legislature meets in January when another effort presumably will be made to straighten out this situation.

(4) *An act to amend Chapter 5, Title 24, Delaware Code, relating to Chiropody.*

This amendment was submitted by the chiropodists to qualify them for payment under the Workmens Compensation Act. The Medical Society had no objection to the extent of this bill, since it did not in any way alter what a chiropodist is by law already permitted to do in the state of Delaware. The original bill contained certain wording which stated that a chiropodist "shall be deemed to be a physician for this purpose". A substitute bill removing this implication was accepted by the chiropodists and has been submitted to the legislature. At the time this report was written, the bill was still pending.

(5) *Senate Bill 271*

The committee voted to give backing to Senate Bill 271 which provided a supplementary appropriation to the state Board of Medical Examiners. This bill passed both houses and was approved by the Governor.

(6) *Associated Reading Clinic*

An Associated Reading Clinc was opened in this area, directed by a chiropractor and an optometrist. The announcing literature did not specify the field of endeavor of each of these persons but only referred to them as doctors. The attorney of the medical society submitted the opinion that the directors of this clinic were violating the Medical Practice Act by presenting themselves as "doctors" without specification of the degree held. The problem was approached by a consultation with the optometric and chiropractic associations, both of which agreed that this was a circumstance which could best be straightenedout by each of the controlling societies in question, and promised to do so.

(7) *The Medical Care of the Aged.*

Since the last report, this committee has continued to be active in this field, and during the past year this activity has included the following:

- (a) participation in the AMA regional conference on aging in Baltimore in March.
- (b) participation in the Governor's conference on aging held in June in Smyrna.
- (c) journey to Washington to confer with Senators Frear and Williams to emphasize our point of view in reference to federal legislation on this subject.

In these and other approaches the committee has attempted to express the opinion of the Society that the problem of the medical care of the aged has been grossly exaggerated for political reasons. It has repeatedly urged that no federal legislation be enacted at least until the subject has been thoroughly aired at the White House Conference on Aging in January 1951. It has recognized, however, the political realities of an election year and has urged our two senators to support only that federal legislation which recognizes that:

- (1) the system be voluntary
- (2) the system exist as far as possible outside the Social Security System
- (3) the administration and determination of need be on a state level
- (4) the system apply only to the indigent or medically indigent rather than all of the aged.

At the writing of this report it should be stated that both of our senators have supported this type of legislation in the Senate Finance Committee and are seeking to prevent dilution of this type of proposal by Forand-type legislation on the Senate floor.

(8) *The Physician as a Citizen*

The Committee has attempted throughout the year to awaken the physician to his responsibility as a citizen. This has been done largely through appropriate comments at various times at county society meetings. The successful outcome of the efforts by organized medicine and like-minded groups to constructively shape the manner and extent of the Congress' aid to older people has forcefully demonstrated the affect we can have on functioning as citizens.

An intensive two-day trip around Delaware by Mr. Reichmann of the AMA Forand Task Force and by our executive secretary was helpful, we think, in crystalizing opposition to the Forand approach among other organizations. The point must be made here that the Forand victory, while encouraging and important, was neither final nor the victory of medicine alone. We were ably supported by such divergent groups as the American Hospital Association, the Chamber of Commerce, the American Farm Bureau, and many others.

We can help consolidate our gains and further our opportunities to shape legislative policy at all levels of government in two definite ways:

First, realize that we do not stand alone. We have allies and we have opponents. Help that you can offer to allied groups, in or out of the health field, can be richly returned by their assistance in times of crises for medicine. The Committee feels that doctors who participate in community affairs, who hold office in service clubs, who join local Chambers of Commerce, who interest themselves in PTA's, who speak before various groups, contribute largely to the strength of organized medicine, as well as to their personal development.

Secondly, the Committee points out that laws arise from legislative climates, and that legislative climates depend upon who holds office. It is probably easier, and certainly the more intelligent approach, to elect the favorably-disposed candidate than to attempt to convert the ill-disposed. Partisan political activity is the only way to accomplish this. If physicians will exercise their rights and duties as citizens by informing themselves of the beliefs of the various candidates and by backing their convictions with legitimate influence and with campaign contributions, our legislative efforts will be vastly simplified and our results correspondingly greater. The Committee wishes to emphasize here that there are candidates friendly to medicine's position in each party, and that it is vitally important for doctors as voters to screen the beliefs of each candidate when making a decision.

Respectfully submitted
W. O. LaMotte, Jr., M.D., Chairman
G. A. Beatty, M.D.

J. Beebe, Jr., M.D.
J. L. Fox, M.D.
J. S. McDaniel, M.D

The report was accepted.

President Marvil: The next report on the agenda is the Woman's Auxiliary.

Report of the Woman's Auxiliary 1959-1960

Keeping ever in mind that our primary function is to be of service to the medical profession, the Woman's Auxiliary to the Medical Society of Delaware has attempted to carry out the program suggestions received from both the national and state sponsoring bodies. Emphasis has been placed upon legislation, A. M. E. F., and recruitment for paramedical careers.

The legislative chairmen of our country and state auxiliaries, as well as the presidents of those organizations, sent letters and telegrams to our Congressman and Senators regarding the Forand Bill. At one critical time of the Forand Bill struggle, fifty postal cards (distributed at an Auxiliary meeting) were written, collected and mailed to our Congressman. In addition, the county legislative chairmen made a survey of Delaware's care of the aged. This report has been given to the Medical Society of Delaware for use at its discretion. Other material given to the Society is the result of a preliminary survey of medical care provided for the indigent in our state. The work consisted of listing alphabetically all hospital clinics and their services by day and hour, and all medical-care aid offered by various philanthropic agencies. The compilation was made by the Community Service chairman, and at the request of the Council of the Medical Society of Delaware.

Contributions from the Woman's Auxiliary to the Medical Society of Delaware to A. M. E. F. totaled $895.45 for this year. Though this amount is a new high for the Auxiliary, it is short of the desired goal; and, unfortunately, it does not represent participation by every member. Rather, it is reflective of the persistent work of the various chairmen for A.M.E.F. and A.M.E.F. projects.

Recruitment for paramedical careers remains a major activity in the Auxiliary program. This year the Health Careers Committee, in screening a total of thirty-one applicants, selected sixteen persons to receive grants-in-aid totalling $4,950.00. Fourteen of this group entered schools of nursing, two began their studies as medical technologists. Of the total amount given for grants-in-aid, $1,400.00 (for five awards) comes from the Woman's Auxiliary to the Medical Society of Delaware. The remainder is from two service clubs: the Lions Club of Milford, with a contribution of $600.00, supports two awards; the Rotary Club of Wilmington, from a fund of $2,950.00, makes possible nine additional awards. The Zeta Chapter of Beta Sigma Phi Sorority of Wilmington also participates in the Auxiliary Health Careers program by giving a grant-in-aid every third year. The recipient of their next award is due to be named in 1961. Recently other organizations have requested information as to how they may cooperate with the Auxiliary program. Students currently benefiting from grants to the Health Careers program are in Beebe Hospital, Lewes; Delaware Hospital; Memorial Hospital; Milford Hospital; St. Francis Hospital; and Wilmington General Hospital of Medical Technology.

Though A. M. E. F., Legislation, and Health Careers may be highlights of an Auxiliary program, other committee work is not necessarily neglected. This fact may be brought to attention by the following:

ARCHIVES: Until this year, Auxiliary records have had no permanent home. They have been well kept, housed in more recent years in a steel filing case which has been shuttled from one President's home to the next. In the Fall of 1959, when the new addition to the Academy of Medicine building was completed, space became available for Auxiliary meetings and for the keeping of all Auxiliary records and supplies. The present project is a search for records of early years in order to complete the files.

CIVIL DEFENSE; MENTAL HEALTH; SAFETY: Activities in these fields are exceedingly well organized in Delaware. Such proficiency is demonstrated in all three areas at city, county and state levels that Auxiliary chairmen of such committees have questioned at times whether they are filling a real need in programming. This year, the Chairmen of Civil Defense, of Mental Health, and of Safety have maintained a liaison with their related civic organizations, worked under their direction, and kept files of their activities.

MEMBERSHIP: The goal of 100 percent membership has not yet been reached except in one county. Kent County, though the smallest of the Auxiliaries in Delaware, has achieved this distinction. Kent County also leads in the per capita donations to A. M. E. F. New Castle County, with the greatest concentration of practicing physicians in Delaware, has the largest Auxiliary membership but falls below the 100 percent mark. Sussex County, with problems pursuant to most resort areas, has an active membership of thirty-six.

Cooperation of the county auxiliaries with the state organization has been most gratifying in our efforts to promote Auxiliary work with, and for, the Medical Society of Delaware and American Medical Association.

Mary Virginia McGee (Mrs. Lemuel C.)
President

The report was accepted.

President Marvil: Now we go to the Special Committees, and the first one is the Advisory Committee of the Woman's Auxiliary.

Report of the Advisory Committee of the Woman's Auxiliary

During the past year the Auxiliary has accomplished the following:

1. Prepared a fourteen-page list of facilities in Delaware available to and participating in the medical care of indigent patients. This report was given to the Society's Committee on Medical Services and Public Relations, A. J. Morris, M.D., Chairman, for review and recommendations as to disposition or distribution.

2. Listed New Castle County's existing facilities and services for older citizens, which report has been referred to the Society's Committee on Aging, C. J. Prickett, M.D., Chairman, for review and suggestions on implementation.

3. Urged examination of the implications of "Forand type" legislation followed by the mailing of letters from members of the Auxiliary to our

United States Senators and the Congressman from Delaware. (At one meeting of a county Auxiliary group fifty postal cards were signed and mailed. The President of the State Auxiliary sent both letters and a telegram on this subject in the name of Auxiliary.)

4. Requested the Council, Medical Society of Delaware, to approve subject matter and speakers which the Auxiliary may use in meeting requests for "programs" from lay groups.

5. The President of the Auxiliary has attended the following meetings related to the work of this group:

- Fall Conference for Presidents and Presidents-Elect of State Auxiliaries, Chicago, Illinois, 1959
- Pennsylvania State Conference Auxilary, 1959
- Maryland State Annual Meeting, Medical Auxiliary, Baltimore, 1959
- National Annual Meeting, Auxiliary, Atlantic City, New Jersey, 1959
- Fall Conference for Presidents and Presidents-Elect of State Auxiliaries, Chicago, Illinois, 1960
- Pennsylvania Conference Auxiliary, 1960
- Maryland State Annual Meeting, Medical Auxiliary, Baltimore, 1960
- New Jersey State Annual Meeting, Medical Auxiliary, Atlantic City, 1960
- National Annual Meeting, Auxiliary, Miami Beach, 1960

6. Utilized the following committees under stated objectives received from the Woman's Auxiliary of the American Medical Association: A.M. E.F., Archives, Bulletin Circulation, Civil Defense, Community Service, Finance, Hospitality, Legislation, Membership, Mental Health, Paramedical Careers, Press and Publicity, Program, Revision of Constitution and By-laws, Safety, and S.A.M.A.

Respectfully submitted,
Lemuel C. McGee, M.D., Chairman
C. C. Gray, M.D.
A. D. King, M.D.
R. F. Lewis, M.D.

The report was accepted.

President Marvil: The next report is on Aging, Dr. Prickett.

Report of the Committee on Aging

Mr. President, Members of the House of Delegates, and Members of the Medical Society of Delaware The Committee on Aging is pleased to submit the following report for the year 1960:

The Committee benefited greatly by the panel discussions held at the 1959 meeting of the Medical Society of Delaware and by the studies made at the Governor's Conference on Aging in June, 1960.

Also, the Division of the Aging contributed much information through its report prepared for the White House Conference on Aging in January, 1961, and this information is available in detail in that office.

The population in Delaware in 1900 was approximately 184,000 with approximately 8,000 people 65 years of age. In 1940 with a population of 266,000, approximately 20,000 were over 65. In 1950 with a population of 318,000, 26,000 were over 65, while in 1960, with approximately 443,000, there were approximately 35,000 over the age of 65 or approximately 7.9% of the total population.

The Delaware State Employment Service reports that the older worker does not have a greater rate of unemployment than the young worker, but when he gets laid off, it is much more difficult for him to secure other employment.

The Social Security Division reports show that 24,194 persons received benefits or an increase over the previous year of 15%. The total payments to recipients in Delaware equals $1,573,076 per month.

As of June 30, 1959, 691 persons out of every 1000 in Delaware over the age of 65 received Social Security benefits, while the National average was 627.

In Delaware we have 10 General Hospitals, 1 for Tuberculosis, 2 for Mental Illness, and 2 for Chronic Illness. Licensed nursing homes number 36. The State Welfare Home has added a new building providing 196 beds. The Methodist Country House, under construction, will provide for 160 beds, and the Milton and Hattie Kutz Home now under construction, will provide accommodations for 40 beds.

Mortality in Delaware for those 60 years and over for heart disease comprised 55.68% of the total, neoplasms 15.62%, cerebral accidents 11.73%, with all other causes being below 3% each.

Out of a total of 504 disabled persons rehabilitated by the Delaware Vocational Rehabilitation Division for the fiscal year 1960, 147 were 45 years of age and older and of this group 23 or 16% were 65 years and older. Rehabilitative services to the aged include the Delaware Curative Workshop, the Opportunity Center, The Memorial Hospital, Wilmington General Hospital, Veterans Administration Hospital, and Emily P. Bissell Hospital in the Wilmington area, and the Milford Memorial Hospital in Milford.

Social Services include Old Age Assistance which averages $49.79 per month and 44 out of every 1000 Delawareans over 65 receive an old age grant. Approximately one-fourth of these recipients also received Social Security benefits which averaged $40 per month.

Delaware has 55,000 veterans and the VA program provided benefits for 1,470 Delawareans over the age of 65 in an amount exceeding $100,000 per month.

Railroad Retirement benefits were paid to approximately 1,940 persons residing in the State which amounted to $182,000 per month for those over 65.

Also, 574 retired State employees were receiving pensions.

Thirty-six social agencies are available to our older residents.

A low rent public housing project exclusively for elder citizens is being built by the Wilmington Housing Authority.

Delaware is greatly in need of the re-establishment of the Adult Education group.

Several towns in the State have Golden Age, Senior Citizens, and other groups attractive to older people.

Biological research is being carried out in Dover and Wilmington hospitals.

The Division of the Aging will continue its studies following the White House Conference on Aging and this information will of course be available to old people, hospitals, physicians, etc.

The Governor's Conference on Aging recommended a central agency in the State to correlate, coordinate and integrate the facilities available in the communities so that maximum utilization could be effected;

That the State of Delaware inventory its existing facilities and the scope of the needs for their use;

That a committee or group be formed in the State which would keep abreast of reasearch being done in the field of Gerontology, the needs of research in the State and disseminate information concerning research needing to be done.

Respectfully submitted,
C. J. Prickett, M.D.,Chairman
Joseph A. Elliott, M.D.
Arthur J. Heather, M. D.
Harold J. Laggner, M.D.
Felix Mick, M.D.
R. B. Thomas, M.D.
Arthur Tormet, M.D.

The report was accepted.

President Marvil: We will now hear the report on the Special Committee for Alcoholism by Dr. Tarumianz.

Report of Committee on Alcoholism

One of the serious problems in Delaware is the extent of alcoholism which continues to exist in spite of the efforts toward prevention and rehabilitation being made by agencies and organizations, both professional and lay. Although complete data are not available, such information as was obtainable is evidence of the magnitude of the problem. Residential care and treatment of persons addicted to alcohol have been provided by four state-supported institutions. Rehabilitative services have been provided by one-state supported agency and at least two voluntary organizations. In addition, it must be recognized that numerous agencies such as the courts of the cities and State and state agencies like the State Board of Health and the State Department of Public Welfare undoubtedly are working with alcoholics at times and may help in the rehabilitative process while dealing with problems other than alcoholism in their clients.

Fortunately for those so afflicted, alcoholism is being recognized more and more as an illness. The general hospitals are demonstrating willingness to admit alcoholics in the acute stage as well as alcoholics suffering from psychosis associated with alcoholism. General practitioners also are using their skills and knowledge of the new medications now available to treat acutely ill alcoholics and to assist them to obtain treatment in the residential facilities. Formerly, psychiatrists in private practice were reluctant to accept alcoholics as patients because of the length of treatment usually necessary and the comparatively small percentage of success with this kind of patient. Recently the Delaware psychiatrists have been including among their patients selected individuals addicted to alcoholism. It has been reported that some success in treating alcoholism has been obtained with selected cases to whom Temposil has been administered under a physician's care.

The following information from the state-supported residential facilities gives some indication of the problem of alcoholism in Delaware. These figures would be considerably higher, without doubt, if information could be obtained concerning the number of persons suffering from chronic or acute alcoholism who never come to the attention of the institutions or agencies. These persons are no less disturbing factors in human relationships in families, in industry, in practically every conceivable area of life.

The Board of Corrections, State of Delaware. The records of the State Board of Corrections indicates that during the fiscal year, 1959-60, the total number of commitments in Delaware on the charge of Drunkenness was 2,018. The total number of commitments on the charge Driving Drunk (or under the influence of liquor) was 693. The number of commitments on the first charge is just one less than the number for the fiscal year 1958-59 (total 2,019). The decrease in the number of commitments on the second charge is considerably larger — 28.4% fewer commitments on the charge of Driving Drunk in 1959-60 than in 1958-59. (The total for the previous year on this latter charge was 968). This decrease may be due, at least in part, to the amendments in the laws regarding this offense. Altogether there were, in 1959-60, 2,711 commitments for alcoholism as the primary reason. Although definite statistics were not available, it is recognized that use of alcohol was a contributing factor in numerous cases which appeared in the records of the State Board of Corrections under other categories.

According to a report by the Delaware Safety Council[1] based on police reports "more than a third of the 98 drivers involved in fatal accidents on Delaware streets and highways in 1959 had been drinking . . . . "Thirty-five of the 98 drivers involved in 73 fatal accidents in 1959 had been drinking. Thirteen of these were listed by the investigating officer as "obviously drunk." Fifteen others were considered sufficiently under the influence of liquor as to be impaired in their ability to function normally.

Among the 83 persons who lost their lives in traffic fatalities in 1959 in Delaware were thirteen pedestrians. Four of the pedestrians killed had been drinking.

The State Welfare Home And Hospital For The Cronically Ill. During 1959-60 25 patients (22 male, 3 female) admitted to the State Welfare Home and Hospital For The Chronically Ill were diagnosed as alcoholic. They ranged in age from 39 to 82 years. Five of these patients (4 male, 1 female) were discharged. One male expired.

The Delaware State Hospital. Among the patients admitted to the Delaware State Hospital during the fiscal year, 1959-60, with no previous admission to a psychiatric hospital, were 55 (44 male, 11 female) diagnosed as alcoholics with psychosis. Sixteen of these patients (14 male, 2 female) were readmitted. The age range of the patients admitted for the first time was 26 to 65 plus years for men, 26 to 65 years for women, with the average of 45.7 years for men, 43.4 years for women. Twenty-three males of this group (54.4 per cent) were between 36 and 50 years of age. Six of the women (54.5 per cent) were between 41 and 50 years old. The age range of the male patients readmitted was 26 to 65 years, rather evenly distributed through the decades. The average age for readmitted males was approximately 46.6 years. The two females were between 36 and 45 years of age.

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[1] "Drinkers Top Cause of '59 Fatal Crashes, List Shows," Wilmington Morning News, January 14, 1960.

Among the alcoholic patients admitted for the first time, there were six deaths, all male. Delirium Tremens caused the death of one patient three days after admission. Three died from heart failure, one death occurring seventeen days after admission. Cancer was the cause of death in one; cerebral hemorrhage the cause in the other.

At the end of the fiscal year a total of 71 patients (57 male, 14 female) with alcoholism as the primary diagnosis remained in the Hospital. The age range of the patients remaining was from 21 years (one male) to 65 plus years. Eight of the patients remaining were under 36 years of age. Thirty-seven (52 per cent) were between 41 and 55 years of age.

The Governor Bacon Health Center. For nearly twelve years the Governor Bacon Health Center has provided residential care and treatment for alcoholic men and women without frank psychosis. During the fiscal year, 1959-60, 84 alcoholic patients (70 male, 14 female) who had no previous record of residential treatment in a psychiatric hospital, were admitted to the Alcoholic Rehabilitation Unit of the Health Center. Twenty others (19 male, 1 female) were admitted for the first time to the Governor Bacon Health Center but previously had been patients in another psychiatric hospital. A total of 102 alcoholic patients were treated at the Health Center for the first time in 1959-60.

During the year there were also 82 alcoholic patients 74 male, 8 female) readmitted for treatment of their alcoholism. The total number of alcoholic patients admitted in 1959-60 for the first time or readmitted was 196 (163 male, 33 female).

The age range for the patients admitted for the first time was 20 to 74 years for males, 20 to 59 for females. The average age for male first admissions was 44.4 years; the average age for female first admissions was 41 years. The age range for readmitted males was 20 to 74 years, while the age range for readmitted females was 30 to 59 years. The average for readmitted males was 46.7 years, for readmitted females was 44.5 years.

At the beginning of the fiscal year (July 1, 1959), 39 alcoholic patients (33 male, 6 female) remained in residential care. There were, therefore, 225 alcoholics (196 male, 29 female) who received treatment in the Alcoholic Rehabilitation Unit of the Governor Bacon Health Center in 1959-60.

During the year 89 alcoholic patients (75 male, 14 female) were discharged from their first admission to a psychiatric hospital. Of the readmitted patients there were 107 alcoholics discharged (96 male, 11 female). One alcoholic male who had been readmitted to the Health Center was transferred to the Delaware State Hosepital for treatment of his psychotic condition. Altogether there were 197 discharges during the year (172 male, 25 female). Of this number 146 or 74 per cent were improved, while 51 or 26 per cent were unimproved on discharge.

Five alcoholic patients (all males) died at the Health Center during the fiscal year. Three had been admitted for the first time; 2 had been readmitted. The ages of these patients were 49, 50, 70, 71, and 74 respectively. Chronic alcoholism was the direct cause of death in 3 of those who expired. One died from coronary thrombosis, the other from the bronchopneumonia due to general arteriosclerosis.

The Mental Hygiene Clinics. Each year a small number of patients with alcoholism as a primary diagnosis are admitted to the Mental Hygiene Clinics of the State and receive out-patient service. During 1959-60, 44 patients (28 male, 16 female) were admitted to the Mental Hygiene Clinics. Of this number 34 (25 male, 9 female) were patients in the New Castle County Clinic at Farnhurst, 5 (3 male, 2 female) at the Kent County Clinic at Dover, and 5 (all male) at the Sussex County Clinic at Stockley. Diagnostic services only were given to 23 patients (20 at the Farnhurst Clinic, 1 at the Dover Clinic, and 2 at the Stockley Clinic). Treatment was given to 21 patients (14 at Farnhurst, 4 at Dover, 3 at Stockley). During the year 24 alcoholic cases were closed (22 at the Farnhurst Clinic, including 17 male, 5 female, and 1 male each at the Dover and Stockley Clinics). At the close of the fiscal year the mental hygiene clinics had 20 alcoholic patients still on active status (12 at the Farnhurst Clinic and 4 each at the Dover and Stockley Clinics). The age range of the alcoholic patients serviced by the Mental Hygiene Clinics during the fiscal year was 18 to 65 years. There were two males in the 18-21 year group (1 in the Farnhurst Clinic and 1 in the Stockley Clinic). The average age for the clinic patients was approximately 38 years.

Voluntary Agencies. The work of voluntary groups in rehabilitating alcoholics is significant. The Alcoholics Anonymous, with active groups in various parts of the State, contributes considerably toward getting into residential treatment persons who are problem drinkers and also giving supportive treatment to the patients after they are discharged from the Hospital. The AA also works with the patients during their hospitalization. The Wilmington Groups meet with the alcoholic patients at the Governor Bacon Health Center twice a week and at the Delaware State Hospital once a week. A group from lower Delaware holds a monthly meeting at the Health Center. Members of the AA act as sponsors for alcoholics in residential treatment. The Salvation Army frequently has provided a first step toward rehabilitation for some alcoholic men after hospitalization. Living accommodations and work have been made available at the Men's Rehabilitation Center operated by the Salvation Army and at the Haven of Hope, another building operated by this organization.

The Prisoners Aid Society of Delaware has included among its clients persons who have been incarcerated for misdemeanors or offenses involving the use of liquor. No doubt some alcoholics have found shelter at the Prisoners Aid Society Residence in Wilmington.

Temporary relief for individual alcoholic patients has been obtained occasionally from the State Department of Public Welfare to provide for their basic needs until they can re-establish themselves in a job. Without such financial assistance a former patient may again seek solace in liquor despite the fact that this has been largely the cause of his being 'down and out."

Conclusion. Although there seems to be greater awareness of alcoholism as an illness and increasing facilities for rehabilitative efforts with alcoholics, the problem continues to be quite serious in Delaware. The need for concerted action in developing a widespread, aggressive preventive movement is apparent. All community agencies, both public and private, must assume responsibility for a strong program, especially one which will help to solve the basic problems with which the alcoholic is trying to deal or to escape through the excessive use of liquor. The resources of education, religion, science, medicine and social science must be mobilized to this end. It is important to rehabilitate alcoholics, but it is vastly more economical and of greater humanitarian value to prevent the enormous waste of human and material resources represented in alcoholism.

Respectfully submitted,
M. A. Tarumianz, M.D., Chairman
Bruce Barnes, M.D.
James A. Flaherty, M.D.
H. T. McGuire, M.D.

The report was accepted.

President Marvil: The next report will be the American Medical Educational Foundation, Dr. Fox, Chairman.

AMEF Committee Report

Your AMEF Committee reports a total of $5,417.89 you have in contributions during the year of 1959 by Delaware physicians and your Woman's Auxiliary to the State Medical Society. The solicitation of physicians has been entirely by mail. All contributions have been purely voluntary rather than through assessments. Your Committee feels this is the most acceptable method of solicitation. We wish to make special mention of the work of the Woman's Auxiliary and its AMEF Committee, with Mrs. Richard W. Comegys as Chairman.

This Committee has worked hard, their efforts producing approximately 10% of the Delaware total. We wish to congratulate them and hope their work will continue in the future.

Respectfully submitted,
J. L. Fox, M.D., Chairman
F. R. Everett, M D.
Virgil Hudson, M.D.
R. L. Klingel, M.D.
W. W. Lattomus, M.D.
C. G. Pierce, M.D.
G. O. Poole, M.D. (Deceased)
S. W. Rennie, M.D.

The report was accepted.

President Marvil: The next is the Grievance Board.

Report of the Grievance Committee

I am happy to report that the Committee for Grievances of the Medical Society of Delaware, has had no complaints about our members referred to it during the past year, consequently, there has been no meeting of the committee.

Respectfully submitted,
Roger Murray, M.D., Chairman
L. L. Fitchett, M.D.
A. R. Shands, Jr., M.D.
H. V. P. Wilson, M.D.
E. R. Mayerberg, M.D. (Deceased)

The report was accepted.

President Marvil: The next is Maternal and Infant Mortality, Dr. Hassler.

Report of Committee on Maternal and Fetal Mortality

During the year 1959 there were a total of 11,775 live births. There were six maternal deaths, giving a .53 maternal deaths per thousand deliveries. These six maternal deaths shall be designated as A, B, C, D, E and F.

Case A—Age 27, Gravida 1, 268 lbs. Patient died of irreversible shock and post caesarean sepsis. Delivery from below was impossible due to shoulder impaction. Some factors here, in retrospect perhaps are avoidable. Any patient of this weight certainly must be given credit for a share of the responsibility. Some factors are undetermined. The Schwartzman reaction could have played a part in this case.

Case B—Age 28, Gravida VII. This patient died at home while being attended by a midwife. There was an abnormal compound presentation and placenta previa. The specific cause of death undetermined. An autopsy suggested probable amniotic fluid embolus. This patient should have been hospitalized as soon as it was apparent to the midwife that the patient was in difficulty. Nothing could have been done for this patient by any physician in her home. All available forces were not marshalled in this case.

Case C—Age 42. Cause of death—Hemorrhage and shock. Rupture of ectopic pregnancy. This case might have been prevented had a diagnosis been made and immediate blood replacement and surgery resorted to.

Case D—Age 32. Cause of death—Acute pulmonary edema following patient's attempt to abort herself with a combination of turpentine and lysol solution. Autopsy showed chemical emboli throughout the lung fields. This case is 100% patient responsibility.

Case E—Age 27. Cause of death—Circulatory collapse-post surgical following supra-cervical hysterectomy following delivery from below. Clinical diagnosis of possible amniotic fluid embolism was suggested. No autopsy was obtained. All possible efforts failed to prevent this patient's ultimate demise.

Case F—Age 37, Gravida X, Para VIII. Cause of death—direct obstetric eclampsia. Patient had a B/P 240/140 when admitted to hospital and 4 plus albumin in a catherized urine specimen. This patient failed to respond to therapy during 5 days of hospitalization. The uterus should have been evacuated, however the period of gestation was only 30 weeks at best and the possibility of getting a viable baby would have been poor. This patient had been recommended for a tubal ligation prior to this last pregnancy. The hospital committee did not pass on this suggestion. This case has some avoidable aspects involving both professional and patient factors.

The deaths as they have occured in 1959 again show—hemorrhage, infection, toxemia and emboli phenomena as the leading causes of maternal death.

Therefore we must continue to be alert to the blood status of all patients. Early recognition of significant blood loss and prompt action to correct the situation must be taken.

The post delivery usage of intravenous pitocin in 5% glucose is very helpful in preventing post partum blood loss from the atonic uteri. This is extremely beneficial where the help situation prevents the most desirable post delivery observation.

Further the committee suggests that where midwives are still functioning, these women should be instructed to send the patient to the hospital quickly, in the event of any complicating situation. No hospital will refuse admission to any patient presenting an obstetrical emergency.

Toxemia is still a serious problem in pregnancy, but can be greatly reduced through increased efforts to improve pre-natal care.

In conclusion, always consider the possibility of ectopic pregnancy in any female exhibiting signs of shock with a surgical abdomen regardless of history given by the patient. Further, always seek the help of fellow physicians when any problem arises. A consultation can be a life saving measure.

Respectfully submitted,
F. S. Hassler, M.D., Chairman
Benjamin Burton, M.D.
W. P. Ellis, M.D.
K. L. Esterly, M.D.
L. L. Fitchett, M.D.
A. M. Gehret, M.D.
C. C. Gray, M.D
O. N. Stern, M.D.
R. O. Y. Warren, M.D.

Report on Infant Mortality

The Committee on Infant Mortality has studied the hebdomadal deaths, those occurring within the first seven days of life, during the year 1959. The plan for the coming years is to study all of the neonatal deaths, those occurring within the first twenty-eight days of life, and the data for 1960 is being collected on this basis.

Study Sources

The information on the infant deaths was provided by the physicians responsible for the care of the babies, using the regular report form. Members of the committee assisted by supplying the data for the deaths that were not reported by individual physicians. These statistics are listed in Tables I and II.

Discussion

The overall rates have not changed to any significant degree. The percentage of deaths due to any one cause has not varied much during the years that have been studied. However, it is worth noting that none of the deaths due to erythroblastosis during 1959 were considered preventable. In

TABLE I

	Delaware	Wilmington General	Memorial	St. Francis	Riverside	Kent General	Milford Memorial	Beebe	Nanticoke	U.S.A.F. Dover	Home	Total
Total live births	2543	2322	1958	831	204	1081	1034	397	477	732	196	11775
Deaths in 1st 7 da.	38	47	31	16	4	16	16	8	7	11	5	199
Corrected Deaths* in 1st 7 da.	37	45	31	16	4	16	14	7	7	11	11	199
Deaths/1000 L.B. in 1st 7 da.	14.5	19.4	15.8	19.2	19.6	14.8	13.5	17.6	14.7	15	55.2	16.9
Deaths/1000 L. B. in 1st 24 hr.	5.9	12.9	11.2	13.2	19.6	8.3	10.6	17.6	12.6	5.5	25.2	10.8
Deaths in 1st 7 da. wt. over 1000 Gm.	21	26	24	8	2	11	10	4	6	11	8	131
Deaths/1000 L. B. in 1st 7 da. wt. over 1000 Gm.	8.3	11.9	12.3	9.6	9.8	10.2	9.7	10.1	12.6	15	40.2	11.1
% deaths previable (500-1000 Gm.)	43.25	42.2	22.6	50	50	31.2	28.6	42.8	14.2	0	27.2	34.2
% deaths viable prematures 1000-2500 Gm.	43.25	48.9	61.3	37.5	25	37.6	64.3	28.6	57.2	63.6	36.4	48.2
% deaths full term	13.5	8.9	16.1	12.5	25	31.2	7.1	28.6	28.6	36.4	36.4	17.6
Inadequate prenatal care	7	11	3	1	0	3	5	2	3	1	6	42 (21.1%)

* Corrections: Delaware — Minus 1 delivered at home and taken to Del. Hosp.
Wilm. Gen — Minus 2 delivered at home and taken to W. G. H.
Milford — Minus 1 delivered enroute to Milford Hosp.
Minus 1 delivered at home and taken to Milford H.
Beebe — Minus 1 delivered in car on way to Beebe Hosp.

TABLE II

Cause of Death	Delaware	Wilmington General	Memorial	St. Francis	Riverside	Kent General	Milford Memorial	Beebe	Nanticoke	U.S.A.F. Dover	Home	Total	
Undetermined	19	23	8	10	1	7	7	5	2	3	8	93	46.7%
Hyaline Membrane	3	6	7	1							1	18	9.0%
Congenital Anomalies	5		7	1		3	2		1	1		20	10.1%
Intrauterine Anoxia	6	5	5		3	1	1	1	3	3		28	14.1%
Intracranial Hemorrhage	2	7	1	1		2	2			3	1	19	9.5%
Intrauterine Pneumonia	2	1	1			1	1					6	3.1%
Meningitis			1									1	.5%
Sepsis			1									1	.5%
Erythroblastosis Fetalis		1		2						1		4	2.0%
Intrapulmonary Hemorrhage				1				1				2	1.0%
Bronchopneumonia		1							1		1	3	1.5%
Aspiration Pneumonia		1				2	1					4	2.0%
Total	37	45	31	16	4	16	14	7	7	11	11	199	
% Autopsies	52.7	53.3	58	37.5	25	75	68.8	50	41.9	81.6	0	107	53.8%
% Undetermined C.O.D.	51.4	53.2	25.8	62.5	25	43.7	56.3	62.5	28.6	27.2	72.6	46.7	

each of the previous years at least one of the deaths due to this cause was rated as preventable.

Obstetricians as well as pediatricians are, on the whole becoming more interested in establishing the proper cause of death in newborns. This is evidenced by a steady increase in the autopsy percentages from 39.2% in 1954 to 53.8% in 1959. The only hospital that has not shown improvement in this category is the Delaware Hospital, which ran 60-70% during the first three years of study, but only around 50% in the last three years.

Prenatal care has gradually improved over the past three years. In 1957, 28% of neonatal deaths had inadequate prenatal care. In 1958 this was reduced to 24% and in 1959, 21.1%.

Discussion of cases with preventable factors.

In spite of the fact that sedation of mothers in premature labor is frowned upon by most obstetrical authorities, it continues to be a very common practice in this state, and looked upon favorably by some of the obstetricians who are responsible for the training of residents.

There were two cases in which Cesarean Sections were done and not considered to have been indicated. Perhaps consultation would have prevented these deaths.

Two deaths were probably due to aspiration of feedings. Both were attributed to inadequate nursing care.

Case I. 4 lb. 7 oz. white male born of gravida V mother. Mother was Rh negative with no titer. Baby was delivered by elective Cesarean Section at 31-32 weeks gestation. The indication given was two previous deaths in utero at 7-7½ months gestation. However, with more careful scrutiny of the history it was found that this reasoning was not valid since the previous pregnancies resulted as follows:

1. 12 year old female—well.
2. 7½ months premature which lived 6 days—autopsy showed subdural hematoma.
3. Abortion at 2-3 months.
4. Fetal death in utero at 7½-8 months.

Baby's cord blood was Rh positive, Coombs test negative. Baby had respiratory distress from birth and autopsy showed hyaline membrane disease.

Case II. An inaccurate history of LMP by mother confused the time of elective Cesarean Section for cephalopelvic disproportion. Section was done two months early, at what was thought to be two weeks prior to EDC. A 2 lb. 8 oz. baby was delivered and died after 8 hrs. Autopsy showed only immaturity.

Case III. 4 lb. 8 oz. white male delivered spontaneously and in good cndition. Developed respiratory distress at the time of the first feeding. Feedings were continued in spite of this and the physician was not notified until after the condition worsened at the next feeding.

Case IV. 2 lb. 5¾ oz. Negro female. Aspirated gavage feedings twice. Autopsy showed aspiration pneumonia.

Case V. 7 lb.2 oz. Negro male delivered spontaneously (?). There was a shoulder arrest. Baby had intercranial hemorrhage. Obstetical consultation should have been obtained.

Case VI. Low forceps delivery of 6 lb. 6 oz. baby. Tear of the Tentorium Cerebelli. Entire right side of the occipital bone was raised. Respiratory distress followed by convulsions.

The committee wishes to again acknowledge our thanks to Mr. Lawrence Morris, Jr., Executive Secretary of the Medical Society of Delaware, The Delaware State Board of Health, and co-operation of all the physicians interested in improving maternal and infant care in Delaware.

The report was accepted.

Report of Committee on Medical Economics

The Committee on Medical Economics held two meetings during the year. The first meeting was well attended by members; the second lacked a quorum.

At the meeting of April 27, 1960, the increasing utilization rate experienced by Blue Cross and the lengthening average stay in hospitals of Blue Cross patients were discussed. The matter had been referred to the Committee by the House of Delegates for investigation and report at the September, 1960 meeting. Discussion of probable causes of these statistics set high the undertaking of more complicated surgical procedures in the state and the operations on so called "poor risk" patients. It was agreed by the Committee that there may be abuse of Blue Cross and Blue Shield, but that this is negiligible and by no means accounts for all increased expenditures. A member of the Committee will undertake to ask the Joint Hospital Council of New Castle County to analyze Blue-plan cases in the hospital over the past few years and present concrete information to the Committee.

The question of the desirability of instituting Blue Cross Group coverage for the members of the Medical Society of Delaware was favorably considered. The Executive Secretary is cooperating with the Committee on Medical Economics in writing this coverage which represents a twelve to twenty dollar saving to each member of the Society who elects to participate, rather than act individually.

The Executive Secretary and the Chairman of the Committee on Medical Economics represented this organization at a meeting of the American Medical Association Conference in Washington, D. C., on Relative Value Studies. The impact of the California Medical Association, which started Relative Value Studies in 1952, highlighted this conference. It is also noteworthy that the Committee of Medical Practice of the American Medical Association of which Dr. Lester D. Bixter is chairman has been working hard to help the profession catch up with patient-doctor relationship without third party or government interference.

After discussion, this Committee agreed that a Relative Value Schedule for Delaware would be desirable. As several states have already adopted a plan, the following recommendations were adopted for presentation to the Council:

A. That the Council adopt the principle of establishing a Relative Value Scale for this state.

B. That the Council consider converting the Medicare Schedule from dollar amounts to relative value units as a nucleus for the proposed Delaware Scale. It is noted that the Medicare Schedule was drawn over the California Medical Association Plan.

C. That the Council undertake to familiarize all Delaware doctors with Relative Value Studies and uses.

Respectfully submitted
E. L. Stambaugh, M.D., Chairman
William Cooper, M.D.
R. D. Sanders, M.D.
Walter H. Lee, M.D.
Ulo Ware, M.D.

The report was accepted.

Report of the Committee on a Medical School

To the Members of the House of Delegates of the Medical Society of Delaware.

In December, 1959, the Council of our society authorized the investigation of the need for and feasibility of a medical school for Delaware. Following a suggestion from Governor Boggs that our society should confer with the University of Delaware regarding the matter, the president, vice president and two others met in April with Dr. Perkins and several of his board of trustees.

Our committee and Dr. Perkins' committee had arrived at the same conclusion by previous independent studies. Briefly the findings were:

1. Present medical graduates (6860 annually) are too few for present needs and in ten years will be 30% below present physician-population ratio.
2. Foreign graduates who have been filling deficits will be sharply curtailed due to the Educational Council for Foreign Graduates restrictions.
3. There are 700-800 vacancies in third and fourth year United States medical school classes at present.
4. That a two year medical school in Delaware would be desirable especially since our state's population growth is so rapid and since Delaware is presently fifteen percent below the United States national average in physicians.
5. Dr. Perkins' estimate for cost is two million dollars for buildings and fourteen million dollars for annuities. He stated that a medical school would fit in well with the present graduate program.

This letter is being sent out in advance of our House of Delegates meeting so that each member may consider it and help in deciding the course our society should take. If action is favorable our society could help provide:

1. Teaching staff
2. Help in fund raising

There is considerable lay interest in such a project especially if research is connected with the medical school. Many believe that funds could be raised for such a project without great difficulty, with the help of some federal aid.

Respectfully submitted,
James E. Marvil, M.D., Chairman
L. B. Flinn, M.D.
A. M. Gehret, M.D.
L. C. McGee, M.D.
C. M. Moyer, M.D.
A. R. Shands, Jr., M.D.
H. V'P. Wilson, M.D.
Mr. Harry W. Lynch, Consultant

The report was accepted.

PRESIDENT MARVIL: The next report is on Medical Services and Public Relations.

Report of the Committee on Medical Services and Public Relations

The committee had three meetings during the year, in February, April and June.

Certain items of old business were either finished or continued:

1. The health information card, a project begun in 1959 with the help of the sister committee of the New Castle County Medical Society, was completed. Several thousand such cards were mailed to doctors throughout the state for distribution to their patients. The response has been rather quiet. No doubt some follow-up should soon be attempted to find out whether any of these cards have ever been used.

2. A health column for syndication in down-state newspapers has been incubating for over a year. Though this society abounds in gifted authors, they are a uniformly self-effecting group who have, thus far, been extremely reluctant to deliver, though not so reluctant to promise delivery. The committee makes progress slowly and is not discouraged.

3. The half-day conference for physicians about to enter practice which was reported upon one year ago, was discussed again. It was the decision of the committee that this project should be abandoned indefinitely.

4. The committee discussed, especially in its June meeting, the problems of enticing or encouraging suitable young men and women into the field of medical practice. Two suggestions were made:

a. That all schools in the state be reminded that this society is ready to provide "career-day" speakers provided reasonable notice is given. The schools are being contacted this month.

b. It might very well be desirable for this society to offer a scholarship to a young Delawarean in medical school, or contemplating medical school. A two-dollar annual assessment on every member would make a very useful fund. There are many aspects to this problem. It deserves study by all interested elements of this society.

Several items not previously discussed came before the committee.

1. Before the February meeting, President Marvil had asked this committee to look into a proposal made by Mr. Edgar Hare of the State Department of Welfare, and which had received considerable newspaper publicity. This was concerned with the purchase, by the state, of Blue Cross contracts for indigent residents of the state.

The chairman talked to Mr. Hare about this proposal. Mr. Hare had no knowledge of how many welfare patients were hospitalized each year, or whether the average hospital utilization by this group was greater than or less than that of the general population.

Accordingly, with the generous help of the administrative officers of the Delaware Hospital, and of Mrs. Donnelly of the State Medical Society, a study was done of all welfare patients hospitalized at the Delaware Hospital during the fiscal year 1958-59. The records of about five hundred people were studied.

Actual data are available in the office of this society. In general, however, it may be summarized here, as follows:

Welfare patients were hospitalized for slightly longer periods than the average private patient, for slightly shorter periods than the average ward patient. The average cost of each hospitalization was about $450.00 of which the New Castle County Levy Court paid approximately $45.00.

These figures formed the basis of a meeting attended by the chairman of this committee and the executive secretary of the society and the people at Group Hospital Service, and Mr. Hare.

It was felt that there were several reasons not to pursue this subject further at this time. These reasons were: 1) the shortage of money in the state legislature and 2) the uncertainty of what the national legislature might enact in the near future as part of a program to help the aged.

2. A Newsletter for lay friends of the society was discussed and a sample drawn up. A proposed mailing list was discussed.

3. Sample spot announcements for use on radio were prepared and discussed. The problems of a) whether we would be given time or would have to buy it; b) how, where and for how much could we have these recorded, are currently occupying the attention of the committee.

4. The desirability of contacting not only the traditional friends of organized medicine such as the chamber of Commerce, the N.A.M., but also of contacting less traditionally friendly groups such as organized labor was discussed at great length and tabled.

Respectfully submitted,

A. J. Morris, M.D., Chairman
J. B. Baker, M.D.
D. D. Burch, M.D.
R. R. Clayton, M. D.
A. E. Maresch, M D.
E. R. Mayerberg, M.D. (Deceased)
J. T. Metzger, M.D.

The report was accepted.

SECRETARY CANNON: The Council, after hearing this report, felt that an additional resolution would properly be part of this report, and it is submitted as part of this Committee's report as an addendum by the Council, particularly in view of certain legislation which has passed in Congress:

"That the State and Counties of Delaware should immediately appropriate matching funds to adequately care for the indigent in hospitals as provided by the Kerr amendment to the bill passed in Congress on the medical care of the indigent."

PRESIDENT MARVIL: We are now ready for a motion on the resolution.

A motion was made, seconded and carried to accept the resolution.

SECRETARY CANNON: Mr. Chairman, this report included the suggestion of a two dollar assessment and we suggested more. Should we take that up at this time?

PRESIDENT MARVIL: There is also another resolution attached to this report which we may consider separately at the present time.

SECRETARY CANNON: The Council, in discussing the suggestion in the report that a two dollar assessment be used as a scholarship fund for Delawarians in Medical School, felt that this would be an adequate amount as there are many problems involved. Feeling that such a fund be highly desirable, the Council recommends to the House of Delegates that a resolution or motion be passed that each member be assessed five dollars a year to be used for this Medical Scholarship Fund, to be administered at the discretion of the Council.

If I may explain, there is much talk of a two-year medical school therefore the exact disposition of such a fund at this time could hardly be clearly defined. In order to start such a fund, we felt that the specific utilization could be deferred but that the fund could be built up by a five-dollar a year annual assessment for medical scholarships.

A motion was made, seconded and carried to assess each member five dollars a year for the Medical Scholarship Fund.

President Marvil: We will now have six special committee reports.

Committee on Medicare Adjudication

No cases were referred to the Committee during the past year.

Respectfully submitted,
W. F. Preston, M.D., Chairman
J. R. Fox, M.D.
O. A. James, M.D.
E. N. Johnson, M.D.
S. W. Rennie M.D.
G. M. Van Valkenburgh, M.D.
Harold Wilberg, M.D.

The report was accepted.

Committee on Medico-Legal Affairs

The following is the Chairman's report on the activities of the Medico-Legal Affairs Committee of the Medical Society of Delaware.

1. The Chairman for the Bar and the Chairman for the Medical Society had a number of active conferences regarding plans for a meeting of the Joint Committee to be held in the Fall of this year.
2. A joint meeting of the committees was held at the Delaware Academy of Medicine, at which time positive suggestions were taken under consideration for the program for the Fall.
3. A meeting of the Joint Committee will be held during the month of August to select a date for the meeting and to complete plans for the program.

Respectfully submitted,
James T. Metzger, M.D., Chairman
W. L. Bailey, M.D.
James Beebe, Jr., M.D.
W. R. Campbell, M.D.
J. L. Fox, M.D.
P D. Gordy, M.D.
J. W. Howard, M.D.
R. F. Lewis, M.D.
J. S. McDaniel, Sr. M.D.
O. J. Pollak, M.D.
G. M. Van Valkenburgh, M.D.

The report was accepted.

Committee on Military and Veterans Affairs

As far as I know there has been no business for the Committee on Military and Veterans Affairs. Consequently there is no report to be submitted.

Respectfully submitted,
O. A. James, M.D., Chairman
R. L. Dicky, M.D.
G. A. Lessey, M.D.
J. W. Lynch, M.D.

The report was accepted.

Committee on National Defense

A report of this Committee was published in the June, 1960 issue of the Delaware Medical Journal. There is no further report.

Respectfully submitted,
J. R. Beck, M.D., Chairman
L. M. Dobson, M.D.
D. N. Gay, M.D.
J. B. Homan, M.D
D. N. Sills, Jr., M.D.
A. C. Smoot, Jr., M.D.

The report was accepted.

Committee on Polio Immunization

The Committee on Polio Immunization had one meeting this year; it was held in Dover in February and was poorly attended.

However, the name immunization program as in 1959 was put into effect. It was less well attended, but the success of immunization may be attested by the number of cases of Polio in Delaware.

Respectfully submitted,
H. H. Stroud, M.D. Chairman
R. H. Beckert, M.D.
George Boines, M.D.
M. I. Handy, M.D.
F. I. Hudson, M.D.
C. M. Moyer, M.D.
J. C. Rawlins, M.D.
R. O. Y. Warren, M.D.

The report was accepted.

The Committee on School Health

The Committee on School Health has had one formal meeting and subsequent work by several members of the committee with the following results:

1. It is recommended that each County Medical Society establish a committee on school health, and that such committees might encourage the development of school health councils in each school district.
2. It hoped to prod the presently inactive state School Health Council into activity.

These decisions were made on the basis that cooperative work of physicians, educators, and allied personnel interested in health problems was a proven method of accomplishing progress on both a state and local level. Since many school districts have problems that are locally different, the need for broad state planning and specific local organization at the school district level is apparent, thus. the desire to recommend both state and local health councils. The school health committee also agreed to cooperate with the Delaware Academy of Medicine in the presentation of a symposium on School Health on October 1, 9:15 a.m. to 12:45 p.m. at the Academy of Medicine. The proposed is as follows: Moderator, Dr. John Jenny, Director of Health, Physical and Safety Education in Delaware.

9:15 a.m. School Health Policy

a. William Bauer, M.D. of the AMA headquarters will discuss the responsibility of the physician in the development of School Health Policies.

b. Mr. Thomas Mulrooney of the Wilmington Public Schools will talk on the Development of School Health Policy.

This will be followed by a discussion of invited participants and questions from the floor.

10:50 a.m. Intermission

11:00 a.m. Health Education in the schools

a. physician analysis incomplete

b. William Creswell, Jr., Assistant Executive Secretary of the AMA Association for Health, Physical Education, and Recreation, and Consultant in Health Education.

The School Health Committee also was interested in the development of meetings on athletic injuries to be held with the high school coaches, but unfortunately this has not made much progress because the coaches' organization appears to be defunct at present.

The Committee thought that its present activity should be one of encouraging interest in the above plans rather than attempt on its own to set up new plans and policies. It strongly urges that physicians have official connections with schools at various organizational levels, especially through the state and county societies and the proposed health councils, as well as personal contacts as parents and in local schools as examining physicians. It is hoped thus that physicians will assume responsibility for establishing good health policies through the recommendations of the AMA and NEA's joint committee on Health Problems in Education and its publication of "Suggestions of School Health Policies."

Respectfully submitted,
Robert W. Frelick, M.D. Chairman
S. Bishop, M.D.
J. A. Glick, M.D.
A. L. Heck, M.D.
J. C. Rawlins, M.D.

The report was accepted.

PRESIDENT MARVIL: Next are the reports of Delegates and the first one is A.M.A., Dr. McGuire.

DR. MCGUIRE: Mr. Chairman, gentlemen, members of the House: This is a rather long report; it has been prviously published in the Journal, (July issue) and it is available to those who care to look it up and review it.

I would like to suggest and ask that more of you attend he activities of the House of Delegates. The interim meeting will be in Washington, D.C. this year. The day of the meeting of the House of Delegates is usually on Tuesday. All resolutions are made, and any member is privileged to attend, any member is privileged to amend a resolution, offer a suggestion, criticize or debate or attempt to compromise any of these matters.

Many people are highly critical of the House and its actions and I think a lot of the criticism is based on ignorance and lack of information and knowledge, and I think it is incumbent upon all of us to be aware of how this organization works. I think it is democratic. I think they are as highly an opiniated group of physicians and politically oriented people as you will find anywhere, from one end of the country to the other, and I think that anybody who shows the interest will find it very profitable and stimulating.

I hope you will take the opportunity of attending the June meeting next year which is in New York, and it is convenient and easy to get to.

The report was accepted.

PRESIDENT MARVIL: The next two reports will be by Dr. Washburn.

Report of the Representative to the Delaware Academy of Medicine

As your representative to the Delaware Academy of Medicine I have to report as follows:

A. During the past fiscal year the buildings of the additional wing of the Academy have been completed and placed in service.

The Academy is occupied in part by offices of the Medical Society of Delaware and of the Editorial Staff of the Journal of our Society and represents now as never before the center of organized medicine, dentistry and the allied professions in Delaware.

In addition it provides space for the offices of the New Castle County Medical Society and an auditorium for meetings of that society as well as meetings of the dental, nursing and other allied groups.

B. The library has grown in importance to the community and state. A list of accessions to the library appears regularly in our State Medical Journal. The periodical library is designed to meet the requirements of the medical and dental professions. and various specialties.

C. With reference to community activities, we have discontinued the Wilmington Health Forums. In their place it is planned to have a health fair in Wilmington, possibly in the Spring of 1961 or 1962.

On the recommendation of the Committee on Meetings and Postgraduate Instruction and with the approval of the New Castle County Medical Society, the Executive Committee of the Academy approved a "Speaker's Bureau" for presentation of medical problems to lay organizations.

A symposium on school health will be held at the Academy on Saturday, October 1, 1960.

On Tuesday evening, October 18, 1960, a joint meeting will be held of the Academy, the Delaware Diabetes Association and the New Castle County Medical Society. The speaker will be Dr. Thaddeus Danowski of Pittsburgh. His subject will be diabetes. On Tuesday evening, November 29, 1960, Dr. Richard H. Overholt of Boston will deliver at the Academy the second annual lecture on "Diseases of the Chest".

A meeting of the Medical-Legal Conference will be held this fall on a date to be announced.

At a meeting held under the auspices of the Academy, the subject of improving the standards of health care in nursing homes was discussed. The suggestions of this group were officially referred to the Council of the Medical Society of Delaware and will be the subject of a separate report.

Respectfully submitted,
Victor D. Washburn, M.D.

The report was accepted.

Report of the Delaware Joint Council to Improve the Health Care of the Aged

In keeping with the policy of the American Medical Association, the Council of this Society at a stated meeting held May 12, 1960, authorized the participation of the Medical Society in a Joint Council to Improve the Health Care of the Aged.

The Joint Council includes representatives of the Association of Delaware Hospitals, the Delaware Association of Nursing Homes, the Delaware Nurses' Association, the Delaware State Dental Society and the Medical Society of Delaware.

The Council authorized the appointment as members of the Joint Council to Improve the Health Care of the Aged: Allston J. Morris, M.D. Lawrence C. Morris, Jr., Executive Secretary, and Victor D. Washburn, M.D.

The Joint Council held an organizational meeting on June 9, 1960 with representatives present from all organizations listed above. Temporary officers were elected and committees appointed.

A second meeting was held on July 7, 1960. By-Laws were adopted, and the following named persons were elected as officers:

Chairman — Victor D. Washburn, M.D.
Medical Society of Delaware
Vice-Chairman — Miss Alice J. Ulmer, RN
President of the Delaware Nursing Home Association
Secretary — Mrs. Grace Weiss, RN
Delaware Nurses' Association
Treasurer — James J. Ficca, D.D.S.
Delaware Dental Society

The Objectives of the Council are as follows:

1. To cooperate with the National Joint Council to Improve the Health Care of the Aged.
2. To identify and analyze the health needs of the aged.
3. To appraise available health resources for the aged.
4. To foster effective methods of payment for the health care of the aged.
5. To develop community programs to foster the best possible health care for the aged, including the establishment of standards for accreditation of nursing homes.
6. To foster health education programs of and for the aged.
7. To inform the public of the facts related to health care of the aged.

The Joint Council has agreed that information should be obtained from other states or areas as to the manner in which they are attemping to solve or bring about an improvement in the health care of the aged.

For example, our Joint Council is studying methods for nursing home accreditation now in use in Western New York State and in a pilot plan which has been operating for a year in a single county near San Francisco. We hope to adapt to local conditions methods that have proven successful elsewhere, and to evolve a concrete plan for such accreditation, on a voluntary basis, in Delaware. While our activities will definitely not be limited to this project, we feel that we must establish a concrete program and history of accomplishment, and that this is a logical place to start.

In this connection, it seems likely that establishments of a separate corporation of or as a subsidiary to the Joint Council may become desirable, although there are no definite plans for this at the moment.

The Council has been financed largely through the office funds of the Medical Society. While the expense has not been great so far, the Council anticipates asking for small treasury grants from each member organization to provide it with working capital.

Summary

This is a summary of an interview that Dr. Washburn had in San Francisco, which was not recorded and is therefore subject to error. The interview was held with Mr. Robert L. Thomas, Assistant Executive Secretary of the California State Medical Association. The interview was held in the offices of that association in San Francisco on Monday, July 11, 1960.

The California Joint Council is composed of the following groups: California Association of Nursing Homes, (this title is my version—the correct title includes that of rest homes) California State Dental Association, Southern California Dental Association, the California Medical Association.

Inclusion of the California State Nurses Association was discussed but was deferred. The Joint Council was financed initially by contributions of $250 by each of the four participating groups.

Three different state agencies, in as many areas, have licensing jurisdiction over nursing homes, rest homes and homes or institutions for the care of the mentally ill.

The formation of the Joint Council and decision to form and incorporate a committee on accreditation came after innumerable meetings were held over a period of twelve months or so with governmental and private agencies concerned with the health care of the aged. The corporate structure was considered desirable from the standpoint of possible litigation.

A pilot accreditation plan has been in operation in a single county in California for about one year. The plan's actual survey or inspection is similar to that used by the Joint Commission on Hospital Accreditation.

The actual survey or inspection is made by physicians usually retired from the Armed Forces of the United States. These persons will be on salary. Each survey is to be paid for by the home concerned, the fee probably to be based upon the bed capacity. It is my understanding that the report of the surveying officer will be reviewed by a committee appointed by the county medical society.

A list of nursing and rest homes and their accreditation status in each county will be distributed to members of the medical profession in that area.

It is my impression that the approach to the problem in California was on the basis of sympathetic understanding and a desire to be helpful rather than that of stern and unyielding authority.

It is recommended that the House of Delegates authorize the participation of the Society in the incorporaiton of a committee of the Joint Council to Improve the Health Care of the Aged.

Respectfully submitted,
Victor D. Washburn, M.D.

The report was accepted.

The balance of this material will appear in the January issue.

President's Page

THE "HELPING" PROFESSIONS

"Religion, medicine, social work, psychology, and education are generally regarded as 'helping' professions . . . The absence of any genuine fellowship among the five groups constitutes a problem of much concern to both the groups and the public." (Cummins, L. Ross, The Helping Professions: An Intergroup Relations Problem, School and Society 80: 161-165).

There are techniques used in common by these professions. An example is "counseling." One may counsel with a religionist's slant, or with a biologic twist, or as a psychologic device (non-directive counseling) and so on, depending upon the training and basic assumptions of a particular counselor.

It seems apparent that the five professional groups should not persist in their isolation and lack of coordination. A tenet of medicine is that the welfare of the patient shall supercede all other considerations. Therefore, we must work toward maximal benefits for the recipient of the efforts of our own and other 'helping' professions. This goal calls for understanding and collaboration.

Our way of life is based on the premise that our citizens will participate in defining and answering community needs. The doctor by virtue of his education and daily experience has qualifications which make him capable of superior service in the planning and implementation of activities directed toward the improvement of his community. His assistance is needed because experience shows that such activities will be less effective without that assistance. If a physician feels that he is not qualified for such service and has nothing to offer to voluntary or official agencies in the field of social welfare, it is because he has not had a chance to learn of their problems and their similarity to some of the problems of medical care.

Long have we known of the impacts on health from poverty, poor housing, education, youth activities and recreation. Agencies working in these areas need the physician's support. One-third of the agencies in the United Community Fund of Northern Delaware employ nurses and utilize physicians in various capacities. Our channels of communication and support are found through service as medical advisors, board and society members, liaison representatives, volunteer workers, and purveyors of medical care. Civic and health aspects of community needs are closely interwoven.

Lemuel C. McGee

In Brief

Heartbeats By Ear

Checking the patient's heart via his earlobe allows readings to be made while the patient is taking violent exercise, in contrast to standard techniques which require the patient to lie down, Dr. John S. laDue, associate professor of clinical medicine at Cornell told the Los Angeles Heart Association. The lobe acts as a filter, screening out the effects of muscle tensions and contractions, and permitting determination of what happens during severe stress periods.

Paraplegics Progress

There is hope that the 250,000 paraplegics in the U.S. may be able to walk with the aid of an electronic pack when experimental machinery is perfected. Successfully used on dogs paralyzed by anesthetics, the electronic system is operated by magnetic tape, which delivers little electric shocks to the four groups of leg muscles that carry out the walking motion.

Politics Obscure Benefits

Current political emphasis on socialized medical programs for the aged have obscured governmental benefits for the sick that the public does not know about. According to *Nation's Business*, "Federal benefits range from job help to tax privileges and from artificial limbs to mortgage insurance. The estimated cost of various programs ranges from $14 billion for retirement payments to $475 million for health care to $49 million for housing to $35 million for employment.

The Erstwhile Pro . . .

Cigarette smoking as a cause of lung cancer is questionable, says Joseph Berkson, M.D., staff member of the Mayo Clinic. Dr. Berkson said that there is some association between smoking and all causes of death. Cancer of the lung causes only a small fraction of the mortality rate and its increase may be due to the ever increasing life expectancy.

. . . And Con

Lung cancer could he reduced 80% if everyone stopped smoking, according to E. L. Wynder, M.D., staff member of New York's Memorial Center for Cancer and Allied Diseases. He claims that clinical records show the lung cancer death rate among persons smoking 40 or more cigarettes a day to be 217 per 100,000 compared to only 44 among non-smokers. He added that in the United States alone, 30,000 persons will die this year of lung cancer caused by smoking.

Coffee And/Or Exercise Breaks

Now that heavy labor and practically all bodily exercise have been eliminated from jobs, it has been suggested by heart specialist Herman K. Hellerstein of Cleveland that Americans take exercise breaks instead of coffee breaks to keep themselves physically fit.

While it has been known for some time that coffee contains niacin, a study made by four physicians has established that four cups of dark roast coffee provide an adequate daily intake of the essential vitamin. *Medical Science, April, 1960.*

Personal Glimpses

Robert W. Frelick, M.D., lectured on *Advances in Medical Uses in Radiation* before Beta Beta Beta, student biology society, University of Delaware . . . Hal W. Geyer, M.D., was guest speaker at a meeting of the Rehoboth Auxiliary to the Beebe Hospital . . . C. Leith Munson, M.D., led a discussion on the topic *Pre- and Postoperative Care of Surgical Patients* at the Workshop held by the Delaware Nurses' Association . . . Walter H. Comer, M.D., was the guest speaker at a meeting of the Delaware Association of Nurse Anesthetists . . . Lemuel C. McGee, M.D., was guest speaker at the dedication ceremony for the Jean Ellen duPont McConnell Nurses' Home, Beebe Hospital . . . Leonard P. Lang, M.D., gave the address at the "Careers in Nursing Day" in P. S. duPont High School, on *How an Allied Profession Looks at Nursing*" . . . At the 5th Annual Medico-Legal Seminar, sponsored by the Joint Committee on Medico-Legal Affairs of the Medical Society of Delaware and the Delaware Bar Association, James T. Metzger, M.D., Chairman of the Joint Committee, called the morning session to order; Lemuel C. McGee, M.D., made introductory remarks; Drs. S. Ward Cascells, Martin B. Pennington, Philip D. Gordy, and Paul A. Shaw participated in the discussion . . . Arthur J. Heather, M.D., addressed the Delaware Society for Crippled Children and Adults and showed color films of the mechanical hand which he developed under an Easter Seal Grant . . . Nathaniel Young, M.D., spoke on "Tuberculosis" at a meeting of the Delaware Society of X-ray Technicians . . .

New Posts

Floyd I. Hudson, M.D., was elected to a three-year term on the executive committee of the Association of State and Territorial Health Officers . . . Mark Kenyon, Ph.D., formerly Director of the State Board of Health's program for prevention of crippling, will take up his new duties in December as Executive Director of Nassau County Medical Society and Nassau County Academy of Medicine, Garden City, New York . . .

Leslie W. Whitney, M.D., announced two new scholarship awards made by the Delaware Division of the American Cancer Society to students at the University of Delaware majoring in biological sciences . . . Joseph A. Arminio, M.D., president of the New Castle County unit of the American Cancer Society, presented certificates of merit to groups of women of four Wilmington churches for hours of service to home patients and addressed the group on the subject of *Cancer Detection Examinations and the Value of Check-ups* . . .
Gerald A. Beatty, M.D., launched the 1960 Christmas Seal Campaign by presenting the new Christmas Seals, flown in by helicopter, to civic organizations in Newark, Wilmington and Dover . . .

Dental Discovery

A U.S. grant has been given Dr. Wiley J. Adams of Oklahoma City to develop his revolutionary idea that the sixteen back teeth cannot be made sharp enough with porcelain. They should be made of chrome cobalt, he says.

Auxiliary Affairs

A BIRTHDAY

This December the Woman's Auxiliary to the Medical Society of Delaware will blow out thirty-one candles on its birthday cake. On December 10, 1929 the first meeting was held at the Wilmington Country Club.

The idea was conceived by the members of the Medical Society of Delaware who wished to provide a Delaware sister for the other state auxiliaries. They passed a resolution to this effect at their annual meeting at Farnhurst, Delaware in October, 1929. Mrs. Harold Springer, Chairman, Mrs. George McElfatrick, and Mrs. William O. LaMotte were appointed a committee to make plans for the auxiliary.

The doctors sponsored a lovely card party and tea for their wives at the Diamond State Tea House on October 11, 1929. Mrs. Springer and Mrs. LaMotte were the hostesses, assisted by Mesdames T. H. Davis, M. A. Tarumianz, John Mullin, Paul Smith, and George McElfatrick. Each one at this delightful party agreed to attend an organization meeting in December.

That first official meeting was attended by twenty-two doctors' wives. Mrs. Springer presided and Mrs. LaMotte was secretary pro tem. The group unaminously elected Mrs. Robert Tomlinson, Wilmington, President; Mrs. Joseph McDaniels, Dover, 1st Vice President; Mrs. William P. Orr, Lewes, 2nd Vice President; Mrs. Lawrence Jones, Wilmington, Secretary; Mrs. M. A. Tarumianz, Farnhurst, Treasurer. Also at this luncheon the group approved the name of the socity, discussed the aims of the auxiliary, membership restrictions, meetings, and dues. Mrs. Tomlinson appointed an organization committee: Mesdames W. O. LaMotte, D. Davidson, Willard Smith, Cecil Harbordt, Roscoe Elliott and G. C. McElfatrick, chairman. On February 4, 1930 this committee met at the home of Mrs. McElfatrick to prepare the by-laws.

The next meeting was held in Dover February 11, 1930. The By-Laws, composed of 10 articles ,were read and discussed at the luncheon. A copy of the By-Laws was mailed to each member of the Advisory Committee: Drs. R. H. Davies, Douglas Davidson, I. J. McCollum, R. Beebe, and C. A. Sargent.

At the following meeting, held May 13, 1930 at the Rehoboth Country Club, the By-Laws were given a second reading and approved. Mrs. Hunsberger, National President-elect was a guest at that meeting.

At the end of the first year, the membership was seventy; they had a delegate to the A.M.A. and a fine organization which has carried on since that time, and has been of valuable assistance to the doctors. The auxiliary has also contributed their members to the national organization. In 1934 Mrs. Tomlinson was elected National President and several other members have been on national committees.

The following ladies were present at that first meeting at the Wilmington Country Club on December 10, 1929: Mrs. Harold Springer, Mrs. W. O. LaMotte, Mrs. Joseph McDaniel, Mrs. Robert Tomlinson, Mrs. William Orr, Mrs. Lawrence Jones, Mrs. M. A. Tarumianz, Mrs. Douglas Davidson, Mrs. T. H. Davies, Mrs. I. J. McCollum, Mrs. R. Beebe, Mrs. J. Beebe, Mrs. Willard Smith, Mrs. Cecil Harbordt, Mrs. Roscoe Elliott, Mrs. Paul Smith, Mrs. John Mullin, Mrs. Ward Briggs, Mrs. James Butler, Mrs. Edwin Bird, Mrs. C. E. Wagner, and Mrs. G. C. McElfatrick.

Editorials

THE SIREN WAILS

It is of interest that New York City, in an effort to safeguard its interns, passed a regulation some years ago forbidding an ambulance from going through a red light. This is in keeping with the current recommendation of a joint committee of the American College of Surgeons, the American Association for the Surgery of Trauma, and the National Safety Council, that ambulances be regulated the same as other vehicles.

This JOURNAL has expressed its views on this subject in September, 1959 and in February, May, and June, 1960. In the Proceedings of the House of Delegates of the Medical Society of Delaware (in this issue) is a resolution, passed unanimously, that shows this Society to be in agreement with the recommendations of the above committee.

The next session of the State Legislature will have presented to it a bill to so-regulate ambulances in the State of Delaware. This bill deserves your active support.

THE ANNUAL MEETING

Under the guidance of President Marvil this Society had one of the most interesting programs ever presented at an Annual Meeting. The papers by Drs. Levinsky and Large from Temple University School of Medicine were enthusiastically received by the audience. Dr. Levinsky has kindly offered your editor to assist in working up the stenotypist's report into shape for publication. Several members of the audience asked specifically that this be done. Dr. Large's paper, equally well given and received, is not suitable for publication due to the fact that a large number of beautiful color slides was an integral portion of this presentation.

IF YOU DON'T, SOMEONE ELSE WILL

How often lately has someone said, "He is a wonderful doctor," asks a well-known editor.

Not often? Woodrow Wirsig,* editor of *Printer's Ink*, the weekly news magazine of advertising and marketing, finds there is a reason why fewer patients today say complimentary things about their medical care. The public, he asserts, is developing a strong resentment toward doctors. It seems to make little difference to them that the United States medical services are the best anywhere in the world.

Mr. Wirsig tells us that the physician's tarnished image in the minds of the public presents a threat and a challenge. Unless the doctors themselves find a way to meet this challenge, someone else will do it for them. He cautions that we must realize the nation's health has ceased to be the concern only of the individual citizen; now it is a matter of universal, and political, concern. Like it or not, health is regarded by many as the government's responsibility.

Mr. Wirsig's prescription: Medicine must keep up, change, and lead the way if it is to survive. Doctors must take the initiative in health care programs and come forward with any needed new plan. Doctors have the knowledge—they can do it—if they don't, someone else will.

Frankly, while this editor has offered constructive criticism in the past (*Give Them a Break*, January, 1959 and *Take Time to Explain*, December, 1959) he has been equally alert to call attention to those of our members whose actions have been over and above the call of duty (Dr. W. T. Chipman, May, 1958). It is possible that Delaware differs markedly from New York but, unlike Mr. Wirsig, we frequently hear of the good done by our members.

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*Presented at Southern Medical Association-Merrell Medical Economic Symposium, St. Louis, November 3, 1960.

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